

PUBLIC HEARING
before

ASSEMBLY AGRICULTURE AND ENVIRONMENT COMMITTEE
on

ASSEMBLY NO. 3037

(Prescribes the conditions under which a
public utility may operate nuclear powerplants)

Held:
April 9, 1979
Assembly Chamber
Trenton, New Jersey

MEMBERS OF COMMITTEE PRESENT:

Assemblyman H. Donald Stewart (Chairman)
Assemblyman Thomas Cowan, Sr.
Assemblywoman Barbara McConnell
Assemblyman James J. Barry
Assemblyman C. Louis Bassano

ALSO:

Norman Miller, Research Associate
Office of Legislative Services
Aide, Assembly Agriculture and Environment Committee

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I N D E X

	<u>Page</u>
Assemblyman Donald T. DiFrancesco 22nd District, New Jersey State Assembly Sponsor of the Bill, A-3037	1
Steven Picco Assistant Commissioner Department of Energy	4
Francis Delaney Chief Regulatory Officer Board of Public Utilities	7
William Saller General Manager of Governmental Affairs Public Service Electric & Gas Company	16 & 1X
Louis A. Sonz Nuclear Fuel Engineer Public Service Electric & Gas Company	18
Richard Fryling, Jr. Assistant General Solicitor Public Service Electric & Gas Company	19
William Steigelmann Chairman, Energy Committee South Jersey Chamber of Commerce	23
Edward Lloyd Director New Jersey Public Interest Research Group (PIRG)	26
Ted Peck League for Conservation Legislation	32
Margaret Wasson Central Jersey Sea Alliance	34
Carol Barrett Conservation Chairman New Jersey Chapter, Sierra Club	36 & 3X
Tina Weishaus People's Independent Coalition	38

I N D E X - Continued

	<u>Page</u>
Charles Wall Environmental Action Student Group Burlington County College	41
Dr. John Schoonover Director of Nuclear Physics Research Fusion Energy Foundation	42
Mark Baribeault Private Citizen	44
Robert Bowen U. S. Labor Party	47
Ann Baker Legislative Agent National Organization for Women	51
Eleanor Coleman Private Citizen	53
Mike Koscinski Private Citizen	55
ALSO SUBMITTED:	
Statement from Jersey Central Power & Light	12X
Statement from Ernest D. Huggard Vice President - Control Atlantic City Electric Company	16X

ASSEMBLY, No. 3037
STATE OF NEW JERSEY

INTRODUCED JANUARY 16, 1979

By Assemblymen DIFRANCESCO, STEWART, Assemblywoman
TOTARO and Assemblyman VILLANE

Referred to Committee on Transportation and Communications

AN ACT concerning the establishment of utility rates and amending
R. S. 48:2-21.

1 BE IT ENACTED by the Senate and General Assembly of the State
2 of New Jersey:

3 1. R. S. 48:2-21 is amended to read as follows:

4 48:2-21. (a) The board may require every public utility to file
5 with it complete schedules of every classification employed and of
6 every individual or joint rate, toll, fare or charge made, charged
7 or exacted by it for any product supplied or service rendered within
8 this State, as specified in the requirement.

9 (b) The board may after hearing, upon notice, by order in
10 writing:

11 1. Fix just and reasonable individual rates, joint rates, tolls,
12 charges or schedules thereof, as well as commutation, mileage
13 and other special rates which shall be imposed, observed and fol-
14 lowed thereafter by any public utility, whenever the board shall
15 determine any existing rate, toll, charge or schedule thereof,
16 commutation, mileage or other special rate to be unjust, unreason-
17 able, insufficient or unjustly discriminatory or preferential. In
18 every such proceeding the board shall complete and close the
19 hearing within 6 months and enter its final order within 8 months
20 after the filing of the order of the board initiating such proceeding,
21 when such proceeding is on the board's own motion; or after issue
22 is joined through the filing of an answer to a complaint, when such
23 proceeding is initiated by complaint.

24 2. Fix just and reasonable joint rates, which shall be charged,
25 enforced, collected and observed by railroads and street railroads
26 in the carrying of freight. Whenever the railroads or street rail-
27 roads involved fail to agree upon the apportionment or division of a
28 joint rate so established, the board may issue a supplemental order
29 declaring the apportionment or division of the joint rate.

28 (c) The board may fix the rates or charges to be made by any
 29 corporation subject to the provisions of this chapter for the deten-
 30 tion of a railroad car containing property transported by railroad
 31 to any point in this State or for the use of railroad tracks occupied
 32 by such car, commonly called demurrage or car service, or for
 33 both such detention and use. Such rates and charges shall conform
 34 as nearly as possible to the rates and charges for demurrage or car
 35 service prescribed and fixed by the Interstate Commerce Commis-
 36 sion for similar service.

37 (d) When any public utility shall increase any existing individual
 38 rates, joint rates, tolls, charges or schedules thereof, as well as
 39 commutation, mileage and other special rates, or change or alter
 40 any existing classification, the board, either upon written complaint
 41 or upon its own initiative, shall have power after hearing, upon
 42 notice, by order in writing to determine whether the increase,
 43 change or alteration is just and reasonable. The burden of proof to
 44 show that the increase, change or alteration is just and reasonable
 45 shall be upon the public utility making the same. The board,
 46 pending such hearing and determination, may order the suspension
 47 of the increase, change or alteration until the board shall have
 48 approved the same, not exceeding 4 months. If the hearing and
 49 determination shall not have been concluded within such 4 months
 50 the board may during such hearing and determination order a
 51 further suspension for an additional period not exceeding 4 months.
 52 The board shall approve the increase, change or alteration upon
 53 being satisfied that the same is just and reasonable.

54 (e) *The board shall not permit any utility within its jurisdiction*
 55 *to incorporate costs incurred in the maintenance and operation of*
 56 *any nuclear fission thermal powerplant which requires the repro-*
 57 *cessing of fuel rods and which has not been in operation at any time*
 58 *previous to the effective date of this act, into its rate base until*
 59 *both of the following conditions are met:*

60 (1) *The board finds that the United States, through its autho-*
 61 *rized agency has approved a technology for the construction and*
 62 *operation of nuclear fuel rod reprocessing plants and permanent,*
 63 *radioactive waste sites and that facilities with adequate capacities*
 64 *to reprocess nuclear fuel rods and store the permanent, radioactive*
 65 *wastes generated from a power plant proposed to be included in a*
 66 *utility's rate base as referred to above, are in actual operation or*
 67 *will be in operation at the time such nuclear facility becomes*
 68 *operable.*

69 (2) The board has transmitted its findings pursuant to para-
 70 graph (1) to the Senate and General Assembly on a day on which
 71 both Houses shall be meeting in the course of a regular or special
 72 session. The board may proceed to approve a rate base change with
 73 regard to a proposed nuclear facility only if the Legislature does
 74 not pass a concurrent resolution disaffirming the findings of the
 75 board within 100 days after receipt of the report. No report shall
 76 be submitted less than 6 months prior to the convening of a new
 77 Legislature.

78 A resolution of disaffirmance shall set forth the reasons for the
 79 action and shall provide to the extent possible, guidance to the
 80 board as to an appropriate method of bringing to board's findings
 81 into conformance with paragraph (1).

82 If a disaffirming resolution is adopted, the board shall reexamine
 83 its original findings consistent with matters raised in the resolu-
 84 tion. On conclusion of its reexamination, the board shall reduce its
 85 findings to writing with the reasons therefor and shall transmit the
 86 revised report to the Senate and General Assembly on a day on
 87 which both Houses shall be meeting in the course of a regular or
 88 special session. The conclusions of the board contained in the
 89 revised report shall be deemed acceptable to the Legislature unless
 90 a concurrent resolution declaring the findings null and void is
 91 passed within 60 days of receipt. No revised report shall be sub-
 92 mitted less than 6 months prior to the convening of a new
 93 Legislature.

1 2. This act shall take effect immediately.

STATEMENT

The purpose of this bill is to prevent more nuclear powerplants from becoming operable in New Jersey before the question of the disposal of spent fuel rods and permanent nuclear waste is settled. The existence of spent fuel rods and permanent, unusable waste generated by these powerplants is a problem because, at this time, there is no approved method of dealing with these volatile nuclear materials except to store them temporarily. A great deal of information has been generated on both sides of this issue. Some have argued that the waste problem is one that will be handled adequately enough within a reasonably short period of time and that it would be disastrous to suspend our nuclear program in the interim. Others have argued that the waste question can never really be settled because there will always be some waste that will need storage and that long-term (perhaps centuries) storage costs

makes nuclear power economically unviable. Also, it has been argued that the impact of nuclear waste on environmental quality is such that all nuclear activity should be stopped for this reason alone.

At this point, it seems that there is enough evidence to suggest that the economic and environmental costs incurred as a result of the disposition of nuclear wastes are such that no additional nuclear waste of a commercial nature should be allowed to accumulate in New Jersey until means for reprocessing fuel rods and disposing of permanent wastes is approved by the Federal Government. It is less than prudent to rely merely on the assurances of industry representatives that a suitable means will be found to deal with used nuclear fuel. The risks of failure in this area are potentially very great, thus it is in the public interest to make sure that the issue is dealt with as carefully as possible. To date, there has been no definitive response given to the question: What will happen to waste from nuclear fuel rods and what will be the cost of this disposition? The time has come to answer this question before New Jersey becomes more involved in the field of nuclear power generation.

This bill stipulates that no utility will be allowed (by the Board of Public Utilities) to incorporate into its rate base costs incurred in the operation or maintenance of any nuclear powerplant brought into operation subsequent to the effective date of this legislation unless two conditions are met. First, the Board of Public Utilities must find that the United States government, through an authorized agency, has approved a means for the reprocessing of spent fuel rods and a technology for permanent waste disposal and that facilities for such reprocessing and storage will be in operation at the time such nuclear plant becomes operable. Second, the BPU must report to the Legislature before it takes any action in this regard. The Legislature is given the power of a negative veto over the BPU if the Legislature disagrees with the findings of the BPU.

ASSEMBLYMAN H. DONALD STEWART (Chairman): Good morning, everyone. This is a public hearing to discuss Assembly Bill 3037. The meeting is being held by the Assembly Agriculture and Environment Committee. My name is Don Stewart. I represent District 3 in Salem and Gloucester County. On the far right of the table is Assemblyman Cowan from District 32 representing Hudson County and our Committee staff member, Norman Miller. We have a list of participants in today's hearing. Anyone who is in the room and would like to be added to the list should see Mrs. Harris on our right over here. Jeannie, would you raise your hand indicating where you are? The list is over 20 now so, we would appreciate it if you intend to testify that you get your names up here as soon as possible. I have a few ground rules before we start. We do intend to confine the testimony to Assembly Bill 3037. We would hope that you would not wander off that topic at all. We may have to remind some of you as the meeting goes on that we are not discussing a general issue. We are discussing a very specific piece of legislation. We would hope that each and every one of you would stick to that. If you have written testimony, we would appreciate your leaving a copy of it with us before you testify and also leaving a copy with the stenographer. We would also appreciate it if you have testimony that is lengthy, that you summarize it during your oral presentation. There will be a printed copy of the public hearing in which your complete text will be published and the Committee will have a copy of your complete text to digest. But, in the interest of time, we would ask you to summarize as much as possible and try not to be repetitive of some of the other people we had testifying. But, our intention is to get everyone to testify today. So you can schedule your day, we will be breaking at approximately a quarter to one and returning at approximately - assuming we still have people to testify - a little after two. With those formalities out of the way, our first witness is Assemblyman Donald DiFrancesco of District 22, the prime sponsor of Assembly Bill 3037.

A S S E M B L Y M A N D O N A L D T. D I F R A N C E S C O: Thank you, Mr. Chairman. Good morning, everyone. Before I give my comments on my written presentation, I'd like to just say that this bill A-3037 is not a reaction to what has occurred recently in Harrisburg but rather is something that was considered and finally introduced several months ago on January 16, 1979. It deals with one specific topic. So, with that in mind, I'd like to begin my presentation and if you'll bear with me, it will take a few minutes.

I would like to begin by quoting from three federal government sources relative to the question of nuclear waste disposal. I have chosen these sources to represent what I believe is a widespread concern about the present status of nuclear waste disposal in this country. I will quote from a Congressional source, namely the Committee on Government Relations, from an Executive source, namely the Comptroller General, and a special inter-agency task force set up by President Carter. First, from the final report of the inter-agency review group which was submitted to the President only last month, we are told something about the problem that we face. "The management of radioactive waste from the past three decades can be characterized by inadequate integration of waste management research and development efforts with those for other parts of the nuclear fuel cycle. This has been caused in part by inadequate perceptions of the additional technological and scientific capabilities needed to develop an acceptable disposal capability - historically assumed to be achievable through isolation of wastes in mined geologic depositories - and in part by low funding levels compatible with a view

that the waste management program should focus on only one geologic medium, namely sea salt for high level waste disposal and few sites." (P.2) (p.5) "It is now recognized that a much more broadly based program which addresses fundamental scientific questions within a systems concept is needed..."

The problem which we face is not an incidental one. We are warned that: "Today, and as projected for the future, the radioactive waste generation rate of the defense-related programs is about constant and small in relation to the future generation of the nuclear power industry. The commercial nuclear power industry has grown during the 1960's and 1970's, and, as a result, has now generated more radioactive waste than the past defense-related activities. The annual generation rate of waste from the commercial nuclear power industry will continue to grow as new power reactors come into operation." (p. 8)

The inter-agency review group thus notes that "An important question is whether the risks associated with the management of existing wastes are larger than we would be willing to accept if we had a choice, and of course we do have a choice with regard to new waste commitments." (p. 6)

The concern over our ability to adequately deal with nuclear wastes was also noted by the Comptroller General in a report to Congress about eighteen months ago when he noted:

"The Energy Research and Development Administration has begun a program to demonstrate by the mid 1980's the feasibility and safety of placing radioactive wastes in deep geological formations. GAO points out that not only has progress been negligible to date, but that future program goals are overly optimistic because the Energy Research and Development Administration faces many unsolved social, regulatory, and geological obstacles."

The Congressional Committee on Government Operations, in its report released less than a year ago entitled, "Nuclear Power Costs" apparently concurred with the Comptroller General when it said: "... adequate federal programs to deal with the radioactive wastes do not yet exist, despite the protestations of the Department of Energy and the Nuclear Regulatory Commission that a solution is just around the corner."

"It is unthinkable that the United States should continue without a national program of radioactive waste disposal and decommissioning, without a clear delineation of federal, state and private responsibility for waste disposal and decommissioning, and without a sense of urgency and priority on the part of government to address this growing problem. So long as this problem remains unresolved, the public's health and safety and the viability of nuclear power in this country are threatened." (p. 3)

The problem that faces this State Legislature is that our responsibilities in the area of protecting the public's health and welfare from nuclear waste is highly circumscribed by the federal government. For better, or worse - and in light of what happened in Pennsylvania, I am not sure which it is - the Nuclear Regulatory Commission holds sway in this area. As the recent court decision in California indicated, there is very little room for state discretion in nuclear power development. It is my hope that this will change. And, as a State Legislator I take the welfare of New Jersey's citizens very seriously and it frustrates me and I'm sure all of you to be told that what happens at Oyster Creek, or Salem is entirely a federal matter.

There is, however, an area within which, I believe, we can presently act as legislators in the best interest of our New Jersey's citizens. This involves the

issue, which is the thrust of the bill, the issue of incorporating the costs relative to running a nuclear power plant into the utility rates.

I have already alluded to the chaos which exists in the federal level concerning nuclear waste disposal. Although there are some indications that some order may be brought to this dismal situation, it is clear that any assurances which we have received that the problem will be dealt with soon have been premature. The fact is, nobody really knows.

Something else which we don't know, which goes along with the general uncertainty, is what the cost of nuclear waste disposal is going to be. If we don't know what the solution is, then we surely can't know what the true costs are going to be. The "Nuclear Power Costs" report that I already referred to noted that "... there are potentially enormous costs associated with the 'back end' of the fuel cycle. The costs of virtually indefinite radioactive waste storage and decommissioning of the nuclear plant remain essentially unknown, and in most cases, have not been factored into the price the present-day consumer pays for nuclear-generated electricity." (p. 3)

My bill would not allow new nuclear power plants - and I emphasize new nuclear power plants - to operate until the question of reprocessing and permanent waste disposal has been answered. I don't think that we can be responsible as people who are supposed to be involved with setting an energy policy for our citizens if we continue to avoid hard questions about the cost of various energy forms. Nuclear energy is supposed to be the least expensive way to make electricity. How can we possibly say this if we don't know what the costs are going to be to get rid of the nuclear waste? How can we allow any more nuclear plants to operate unless we have some answers about what our citizens are really going to pay, not only now, but in the future?

I believe that A-3037 is a reasonable way of dealing with this particular problem. I think it does not run afoul of federal law because it does not deal directly with construction or with problems of health and safety. It also allows the utilities to make their own decisions regarding the future of nuclear power. If a reasonable means for dealing with spent fuel rods and permanent wastes can be found which is economically viable, and the utilities are confident of this fact, then there is no problem. If anything, this bill should force the federal government to be consistent. If it is going to dictate that we must have nuclear power then it also must take the responsibility now, before it goes any further, of giving a definite answer to this perplexing question of nuclear waste disposal.

I trust that you are all familiar, or will become familiar with the bill, so I will not elaborate on its provisions. There are some small, technical amendments which will be made to the bill in order to make it conform to the language used by the Board of Public Utilities. This can be done easily and I trust will not take away from the more important issues which this bill raises and really the concept behind the bill that's been introduced. Thank you for the opportunity to testify and that is the end.

ASSEMBLYMAN STEWART: Senator DeFrancesco, could you just enlighten the Committee as to the status of other states? Do any other states have similar legislation like this on the books right now?

ASSEMBLYMAN DIFRANCESCO: This is off the top of my head but, I believe that California and Maine totally banned the construction of nuclear power plants and there are approximately 15 to 17 states that have placed restrictions on the construction of nuclear power plants.

ASSEMBLYMAN STEWART: Dealing with the waste issue or just outright moratoriums?

ASSEMBLYMAN DIFRANCESCO: I don't believe that it deals with just the waste issue.

ASSEMBLYMAN STEWART: O.K. Thank you very much. We have two additional members of our Committee here, Barbara McConnell from District 14 which includes Mercer, Middlesex, and Louis Bassano from District 20 representing Union County. Our next witness is Steven Picco, Department of Energy, Assistant Commissioner. S T E V E N P I C C O: Good morning Mr. Chairman and Committee members. The Department of Energy appreciates the opportunity to present comments on Assembly Bill 3037.

Before I get into the policy questions raised by this particular bill, I would like to raise one or two technical problems with the legislation. The first is that maintenance and operating costs are excluded from the rate base. The Board of Public Utilities uses a different formula in calculating the rate base. Although maintenance and operating costs do find their way into rates, rate base is a term of art which would have to be changed in order to effectuate the intent of the legislation. Frank Delaney from the Board will be able to give you the specifics on how that should be done. The second one is the ban on a power plant that requires the reprocessing of fuel rods. As I understand it, no power plant requires the reprocessing of fuel rods. The reprocessing of fuel rods is an option available in the disposal of the wastes. Perhaps that language should be amended to tighten that up a little bit because you could argue that where there is an arrangement being made to dispose of the fuel rods by some sort of underground storage, that is not a reprocessing and, therefore, the plant would be exempt from the provisions of the Act.

The Department of Energy, on a policy basis would oppose A-3037, primarily on the grounds that the exemption applies only to those plants which would be in operation on the date of the Act. That language works to include in the provision of the bill the Forked River and Hope Creek stations which are presently well under construction but not yet in operation or probably won't be in operation during this session of the Legislature. It is our belief that the need for these facilities has been adequately demonstrated by the utilities to the various regulatory bodies in the State and that to change the rules of the game at this late date would be a disservice to New Jersey rate payers and to New Jersey electric consumers. The California case that everyone is alluding to would appear to prohibit this bill. What the California case basically says without getting into the specifics is that a court will look at the intent of the legislation as far as the nuclear power plants are concerned and given the fact that the federal government has reserved to itself the question of waste disposal and the effects flowing therefrom, if the court deems that a state law is intended to circumvent that federal mandate then that law will be struck down. And the California case struck down a statute which is very similar to this proposal. For your information, about 17 states either have an act or are considering some sort of moratorium on nuclear construction - not necessarily operation - until the waste disposal problem has been solved to the state's satisfaction by the federal government.

One other issue that flows from this narrow exemption is the question of whether or not after a utility has spent millions of dollars in pre-construction and construction costs and the state takes an action which would, in effect, require them

to halt construction, whether or not they can recover from the state the amounts spent in construction under the Fifth Amendment - taking without due process. Basically our position is that the plants currently under construction have met so far all the environmental, regulatory, and need goals that have been set for them by the State and federal government. And having done that, they should be allowed to continue construction. That is not to say if this bill is amended to exclude Hope Creek and Forked River that we would not continue to oppose it. I just don't know. If that amendment is made then I will submit supplemental comments at that time. That about sums up the position of the Department. I'm free to answer any questions that you may have.

ASSEMBLYMAN STEWART: Yes, Steve, first you mentioned some technical amendments which we're aware of - the rate structure part and the definition requiring disposal of fuel rods. Your statement on which facilities this might or might not affect - I thought I heard you correctly that you said it would affect Forked River and both Hope Creek I and II - would it also not affect Salem II?

MR. PICCO: Yes, Salem.

ASSEMBLYMAN STEWART: You're satisfied that the terminology in operation does not apply - Salem II is not in operation at this point it could be---

MR. PICCO: It could be. Well, that's one I'm not sure of. It could be by the time the bill is passed.

ASSEMBLYMAN STEWART: O.K. Do you know duration for on-site storage of spent fuel that's in the Hope Creek I and II permits? How long were they allowed to store on site?

MR. PICCO: I don't have that information off hand. Frank Delaney can---

ASSEMBLYMAN STEWART: Well, we can ask that when they appear. I know Salem I and Salem II are either four or six years---

MR. PICCO: They're both in for expansion.

ASSEMBLYMAN STEWART: That brings me to your point of changing the rules in the middle of the game. It doesn't sound to me that we're changing the rules. It sounds to me as if the federal government is changing the rules in the middle of the game. When those plants were approved, the storage was for 4 years, that's what the DEP gave us CAFRA permits for and that's what the permits were based on.

MR. PICCO: Right.

ASSEMBLYMAN STEWART: Now because the federal government has not acted, the industry has had to go back and ask for a change in the rules in the middle of the game. Now they want to store for 17 years.

MR. PICCO: The problem is that the feds are doing it. And, the feds have the control as far as all the rules are concerned. What I'm saying is that basically as far as plants under construction I don't believe - at least under the California rationale which may actually be overturned by the Supreme Court - under current latest case law on the subject, it doesn't appear that the state has the power to change the rules. It may be overturned or it may not. I just don't know. There is one other thing as to plants currently under construction. Under the Hope Natural Gas case which is the leading case as far as rates and the power of government to allow a utility to exist, that case holds that government has to allow a utility to make a fair profit. And, I can envision the argument if this bill passes: that the New Jersey Legislature by forcing the utilities to, in essence, walk away from a few million dollars of investments - and also forcing them, incidentally, to either buy power or to construct from scratch non-nuclear facilities to make up for demands in the near future - the State is, thereby, denying them

the right to make a fair profit. I'm just raising a possible problem. I don't know if they will, in fact, raise it.

ASSEMBLYMAN STEWART: Were you in the DEP when the CAFRA permits were issued?

MR. PICCO: One of them. In Salem II.

ASSMEBLYMAN STEWART: O.K. you were. I have that information in front of me and I'm looking at a statement in it dealing with preemption and the cases that you mentioned. Just to take a sentence out of it, it says, "The rule of XYZ case may arguably preempt DEP's authority to exercise CAFRA to set specific health and safety limitations or, less plausibly, any other requirements with respect to nuclear fuel---" It appears to me that in the CAFRA permit, David Bardin, who was our Commissioner at that time and people in the DEP weren't 100% sure that we were being preempted. And, we haven't been sued at least to my knowledge.

MR. PICCO: It is still a question that's up in the air. Some other states with coastal plants are being sued on those grounds. We haven't seen a court case on it yet.

ASSEMBLYMAN STEWART: While we have you here let me hit you with some other questions. You may be our only person who will be able to give us some facts on Salem II CAFRA permit. And, I realize this is taxing your memory ---

MR. PICCO: It also puts me in a very difficult position.

ASSEMBLYMAN STEWART: The CAFRA permit assumed that there was going to be 4 years of storage at the Salem site. Now there is an application for 17 years storage. The way I read the CAFRA permit, it hinged on that contingency - that there would be 4 years of storage in that site. It appears to me that if there is a change in that procedure, it drastically affects the CAFRA permit that was given to that site.

MR. PICCO: Without binding DEP in any way because I can't do that - just speaking as a lawyer - it seems to me that they would have to go in for modification of their permit. They would have to request a new permit or ask for modification in terms of the other permit.

ASSEMBLYMAN STEWART: We would have to ask someone else whether that has happened or not.

MR. PICCO: Right. I don't know that it has.

ASSEMBLYMAN STEWART: Could you educate us a little bit as far as the CAFRA permit getting into the decommissioning of the facility and a plan had to be submitted 6 months after this, which I assume was filed, again, we can ask the other people about that --- The same question again, I would assume the fact that now there may be 17 years storage on that site which would drastically affect the decommissioning of that facility and again might drastically affect that CAFRA permit?

MR. PICCO: Right. Just a broad sweeping statement on any permit. Where a permit sets out conditions and those conditions are changed by either party, there has to be some sort of supplemental document, either a new permit or a revision to the existing permit addressing the changed circumstances. I would think that that would carry across to all the reports required to be submitted as part of the first permit process.

ASSEMBLYMAN STEWART: O.K. Again, reading through the CAFRA permit, and I don't know if this is in your line or not but I'll ask you and if you don't have it, maybe someone else will when they come up. In several instances the question of uranium and plutonium oxide fuel rods kept coming up and the storage of that

particular type was prohibited. Do you know if that's the kind of fuel rods we're talking about? I don't have the slightest idea what the difference is but evidently there was a grave difference because it is mentioned many times. Are we talking about storing that sort of thing at Salem I & II, Hope Creek I & II?

MR. PICCO: Not to my knowledge.

ASSEMBLYMAN STEWART: There's been no change in that. O.K. Any other questions? I hate to let you go. There is a wealth of information here. Let me see if there is anything else that may have popped up. We said we were going to stick to the storage issue and I want to stick to it but since you have this wealth of information from both sides --- Does the incident at Three Mile Island concern you as far as the storage issue is concerned? Do you see whether the fact that there is storage on site affects at all the ultimate dangers that occur at a site like that?

MR. PICCO: Speaking as a layman on this because I don't have the scientific knowledge, it seems to me that if the worst happens at a reactor, the fact that you have fuel on site or not is not going to make a heck of a lot of incremental difference to the damages that occur. I just don't think that happens. Some of the other people who are more familiar with that may change it but it seems to me that if something really bad happens, the question of something really bad and something really bad plus something - the incremental difference isn't that great.

ASSEMBLYMAN STEWART: I guess in layman's terms the average person on the street wants to know if an accident like that happened and there was 17 years of spent fuel sitting there on the site, could that be released into the atmosphere? Is it another peril we have to worry about over and above the meltdowns and everything else we heard about?

MR. PICCO: I don't know the answer to that. I'll just lay out that the CIA estimates that in the early and late fifties the Russians had tremendous problems with nuclear storage. And at least one of their nuclear storage sites is believed to have exploded at some point. I understand that at that time they were not using any of the techniques that are currently being considered by the federal government. So, we may be just discussing apples and oranges. There have been problems with nuclear storage, at least as far as the CIA knows. Of course if we rely on their Iran information, who knows?

ASSEMBLYMAN STEWART: Does the Department have a position as to the request for the expanded storage to this date? Have you people looked at that question, number one? And if you have are you convinced it is a safe system?

MR. PICCO: We have looked at it. The time limit, as far as I know, hasn't passed for us to submit a report. And, I haven't seen a report. I know that our engineers are taking a look at it but I have not seen a report. I'll submit it to the Committee as soon as it is ready.

ASSEMBLYMAN STEWART: Fine. We will be meeting on this subject a couple more times, I'm sure. Thank you very much. It was very helpful. Next is Francis Delaney, Chief Regulatory Officer of the BPU. So we can have people getting in line and ready to roll, following Mr. Delaney will be Bill Saller of PSE&G

F R A N C I S D E L A N E Y: Mr. Chairman, members of the Committee, thank you for inviting the representative from the Board of Public Utilities to comment on this bill. Mr. Sheppa is an engineer on my right with the Board of Public Utilities and may be able to respond to some of your technical questions. Briefly, our position on A-3037 is that we are opposed to the enactment of the bill and our

opposition is based on a number of positions. You've already heard from the sponsor of the bill and from Mr. Picco that there are some relatively minor language changes which we can assist the Committee to make if that is their desire - to make the corrections that is. Basically, O & M expenses are not the inclusions in rate base. There are two legal questions which we think should cause the Committee some concern. Mr. Picco mentioned the first, that is a question raised recently by a decision in Southern District Court of California which questions the constitutionality of the statute similar to this one. Basically, the court found there that the supremacy clause of the Constitution prohibited a state from enacting a law where the federal government has preempted the regulation of this particular issue. I would suggest that the Committee read that case. It is only about 10 or 15 pages long. I think you'd probably agree with me that that case raises substantial problems.

The second legal issue which we think causes a problem as I interpret the intent of the bill, it does not prohibit the construction of a nuclear power plant. It would permit a nuclear power plant to go into operation. It would attempt to prohibit the inclusion of operating and maintenance costs associated with that plant to be included in the calculations that are finally used to arrive at retail rates for electric service. It seems to me that where a power plant has been dedicated to the public service, where the public is secure in service, if the utility owning that company is not permitted the opportunity to recover its reasonable O & M expenses related to that service, that there would be a strong argument for a position that it could be a confiscation of the property. There is a long series of U.S. Supreme Court cases which says generally that the utility company has a right to a fair opportunity to recover its expenses associated with providing services to the public. It's not a guarantee, as some people have indicated, it is a fair opportunity. So, that is our second legal problem.

Assuming that certification could be granted by the board to a plant, which is highly unlikely in the near future or even in perhaps the long-term future, the procedures which the board would be required to follow by securing the Legislature's approval are extremely convoluted and complex and probably time consuming. Just consider that a rate case involving the major electric utilities takes approximately a year to litigate, some of them take a lot longer. Assuming there could be certification - which I think everybody realizes that the art on the disposal of nuclear waste is not at all refined and is probably at least a decade away - that this certification procedure is rather burdensome, to say the least, and by my estimate can take anywhere from several months to a year to secure the Legislature's approval on something that the board has already certified after exhaustive litigation.

Our other point is generally that New Jersey needs power. I think we can all agree on that. There is a question of where we are going to get the power. Basically, there are relatively few choices. You can get electric generation from oil, coal, nuclear, or gas. Practically, the federal government and/or supply problems, and/or price problems have knocked out natural gas as an alternative for generating electricity. OPEC has dampened our enthusiasm for using oil as a generating fuel although we do use it and pass those costs on to the consumers. Coal is an alternative and has serious problems. Nuclear is an alternative and has serious problems. I might add if I haven't already stated it that the board recognizes that this is a problem, that is, the disposal of the waste from nuclear generating facilities. We just don't think that this is the appropriate vehicle to meet the problem and we don't think that this type of a bill would be legal when matched up

against the federal jurisdiction.

There are four nuclear power plants under construction in New Jersey. One of them, I believe it's Salem II, will come on line in the latter part of this year. Forked River was scheduled for 1983. As you are aware from the press, construction on that site has been suspended because of financial problems that Jersey Central Power and Light is currently facing. There are two other plants scheduled, one for 1984 and one for 1986. I believe they are Public Service's plants. Hope Creek I and II are those scheduled for 1984 and 1986. If this bill were to pass in the next 3 or 4 months, it would affect Salem II and if it were to pass in the coming years would affect, of course, the other plants. Most of the base load generating facilities which are presently under construction - and you are talking almost ten years into the future for the construction of these plants and probably 4 to 6 years for non-nuclear plants - most of the base load construction through 1986 is forecasted to be nuclear power plants. They are being constructed because there is a perceived need for the power. I would think that if there is an intent on the part of the Legislature to prohibit, and obviously the statement of the bill indicates that is the intent, to prohibit the construction of nuclear power plants that the reasoning involved in making that decision would have to involve a consideration of what are the alternatives. As I think you are all pretty aware, the alternatives are mighty slim. My rough estimates on the amount of electricity currently generated by nuclear power in the State of New Jersey - perhaps later speakers can refine these figures - are approximately 30%-40% of the electricity generated in New Jersey comes from nuclear power. I think in 1978, I can give the figures, that Public Service, for instance, approximately 25% of their power was generated by nuclear power. As a general figure, Jersey Central Power and Light generated in 1978 approximately 50% of their power. So, let there be no mistake, nuclear is here, nuclear is forecasted to be here. And if it is not going to be here it is going to have to be replaced by something else. I heard Assemblyman DiFrancesco categorize the federal position and I'm not here to defend the federal government. My recent readings involving this issue indicate that the federal government recognizes that there is a problem and, from my readings, have spent hundreds of thousands of dollars investigating the problem. They are a long way from arriving at a definitive answer. The recent federal report which the Assemblyman mentioned forecasts that this problem will not be solved before the late 1980's, perhaps 1990's. Nineteen ninety two is one date which that report mentions. That about finishes my comments. We'll try to answer any questions you might have.

ASSEMBLYWOMAN McCONNELL: Mr. Delaney, Chairman Stewart has asked this question of other witnesses and I'd like to ask the same question because nobody seems to have a definitive answer on it. In the event that there is a similar accident in one of our nuclear plants in New Jersey, what is your opinion as to what effect 17 years of spent fuel would have on such a disaster accident?

MR. DELANEY: I'm an attorney and have a sense of policy. I'm not an expert and anything I would say I don't think would add to the substance of what you are looking for. I'm sure there may be experts who will testify. They might be able to help you out.

ASSEMBLYWOMAN McCONNELL: O.K. In your testimony obviously you are opposed to this legislation. But you also indicate that there are some minor language changes that you would be willing to work with the Committee on. Could you elaborate on what you are talking about there?

MR. DELANEY: Sure. On page 2 of the bill, down around line 58, references rate base --- Basically, it is saying, the Board shall not permit any utility within its jurisdiction to incorporate O & M costs into its rate base - I paraphrased that. Operating and maintenance costs are not included in rate base. Rate base is a term which attempts to identify that physical plant or capital investment. O & M costs are operating expenses. Capital investment would be the cost of the physical plant minus depreciation.

ASSEMBLYWOMAN McCONNELL: So what you are saying is that this language is technically wrong or that utility companies do not include operation and maintenance in their request for ---

MR. DELANEY: Excuse me. They certainly do include O & M costs in their requests for rate cases. And the board after examination certainly does include reasonable O & M costs in the formula used to arrive at the final determination of what amount of rate relief is necessary. Reasonable O & M costs are reflected in the customers' rates.

ASSEMBLYWOMAN McCONNELL: So it's a matter of semantics. You were talking about a technical ---

MR. DELANEY: Yes. Yes. This can be corrected. O & M costs of any generating facility are included ---

ASSEMBLYWOMAN McCONNELL: Then you would support the language of the bill if it were changed to reflect technical accuracy?

MR. DELANEY: We wouldn't support it but if the bill were going to be enacted we'd like to see it reflect something that, at least to our minds, makes sense. To a lot of people who aren't involved, it doesn't make sense in the first place.

ASSEMBLYWOMAN McCONNELL: O.K. Any other?

MR. DELANEY: There is a reference on the second page to the rate base, page 3, line 72, I think. "The board may proceed to approve a rate base change ..." is a minor problem.

ASSEMBLYWOMAN McCONNELL: Mr. Delaney, you also indicate in your testimony that perhaps this bill would be unconstitutional, that there are all sorts of legal questions this bill raises. What do you think would happen if this bill were enacted into law? What would the utility companies do?

MR. DELANEY: I don't know. I don't know what they would do. I would imagine they would be forced particularly in the near future, if the bill were enacted within the next few months where it would take effect on a plant which is supposed to come on line in late 1979 and they were about to be precluded from the opportunity of recovering what they consider to be - I think the law considers to be - reasonable operating and maintenance cost, they would probably go to court. Incidentally, the California case is interesting. The first thing the court decided was how do they get jurisdiction? They had to find a controversy. They found the controversy based on the fact that an engineer who was employed by the utility was fired because the utility decided not to build a plant. They didn't need a nuclear engineer. He was one of the litigants, one of the plaintiffs in the case. There were also a number of trade groups, construction unions, a number of foundations that brought the suit.

ASSEMBLYWOMAN McCONNELL: Mr. Delaney, you indicated in your testimony that we, as a Legislature, should consider the alternatives if we're going to turn our backs now on nuclear power. What are the alternatives? There is a need for energy in the State of New Jersey. But, I don't think this argument sets too well

with the people right now. People are frightened. People are concerned about what happened at Three Mile Island. And I think the Legislature has a responsibility to think very seriously about the safety of the people in New Jersey. Certainly, we have to be concerned about future energy supplies in our State but I can't buy that argument right now that we must accept the idea of nuclear energy just because there are perhaps no other alternatives. Don't you think this legislation as much as anything perhaps is trying to force the federal government, the utility companies, or even the Legislature itself to come up with some answers about the storage of fuel? The Chairman has pointed out that under the CAFRA permit they were talking about four years storage and now we're talking about 17 years storage. When are we going to get some answers? When are we going to be able to assure the people of the safety factors in this whole nuclear issue?

MR. DELANEY: Well, I understand completely what you are saying. I'm sure you are aware that this is a relatively - I don't want to say a small issue - this is only part of the total nuclear issue. There are so many other issues involved. I'm not trying to downgrade this issue. Certainly the Legislature has an obligation to look into this issue and to examine various problems within this particular issue. There is no short and sweet answer to this nuclear waste problem. The report which Mr. Picco referred to says there is not going to be an answer until the late 1980's or 1992. Apparently the federal government is prepared to pour hundreds of millions of dollars into the solution. It's not going to be an easy solution. There are no guarantees. It's not going to be a cheap solution.

ASSEMBLYMAN STEWART: One thing I think we should disagree on and that's your statement as to the intent of the bill. I think the sponsor made it clear, and I think the statement makes it clear, that the intent of the bill is not to impose a nuclear moratorium. The intent of the bill is to do as Assemblywoman McConnell just stated, to force the federal government to address itself to what is a growing problem in this State. With that out of the way, does it bother you or the BPU that we will have 6 sites in the State all of which will probably, unless something is done, be permanently storing spent fuel on site for a long period of time?

MR. DELANEY: Apparently, my understanding is that the utilities have requested an extension, particularly Jersey Central, P.S., of the amount of spent fuel that can be kept at the generating facilities and also the length of time. The request is not one of a permanent nature. To my understanding, the intent of the federal government is that permanent disposal cannot take place at these generating sites. It is going to take place either in various deep mines in various parts of the country and parts of the world - that's part of the experimental studies they are making right now - or somehow reprocessing it which has apparently taken a back seat to the investigation of placing this waste in deep mines. We're concerned about it. We would prefer that somebody else keep the fuel. I'm sure that somebody else would prefer that we keep the waste fuel. I think that is a problem that nobody wants and that's why the federal government is the one who has the jurisdiction to decide on how the fuel should be permanently located.

ASSEMBLYMAN STEWART: I guess the term "permanently" is in the eyes of the beholder. But, when you are talking about a 40 year life span for a facility, which is a figure kicked around, I don't know what that is supposed to mean. Will you lock it up in forty years, barricade the doors? I don't know what happens after 40 years. But, 17 years is a long time when you're talking about a 40 year life. That is a pretty long time, I think. And I can hear somebody sitting there with the

exact same arguments that you are giving us 17 years from now. Gee, we can't make them close because they have an investment. And we can't make them close because what are we going to do for power for the State? So, therefore, it has to stay here another 15, 20, 17 years. And all of a sudden even though the federal government tells us we can't be a permanent site - we're not going to have it for 1,000 years - it keeps going. You've done a good job of telling us why we can't do what Assemblyman DiFrancesco is trying to do. Do you have any positive suggestions as to how we can, not ban nuclear facilities, but get the federal government off dead center on this issue of storing the waste? Do you have any suggestions for how you would do it?

MR. DELANEY: I don't. I think the federal government recognizes that a problem exists. It's not a question of lack of recognition that a problem exists. The question is how to solve the problem. It's basically a technical problem and a congressional delegation is not going to solve a technical problem. They have a number of task forces. Apparently, President Carter is very much aware and has placed tremendous emphasis on this problem.

ASSEMBLYMAN STEWART: But haven't these dates changed already, several times? Wasn't it supposed to be solved in the late '70's and early '80's? Now we're talking about the '90's.

MR. DELANEY: My recollection is the dates have changed. Within the last 5 years or so the facts have changed. As I recall, reprocessing 4 or 5 years ago was still a viable alternative. There were a number of private entities, I think General Electric had a reprocessing plant, the federal government had another reprocessing plant, but, for one reason or another they didn't work. And now they appear to be backing off the reprocessing response and moving towards a burying process - burying in various types of geologic formations, various kinds of canisters - and that appears to be the avenue they are pursuing right now.

ASSEMBLYMAN BASSANO: The only comment I have is that, in your opinion, don't you feel that by the federal government's going to this 17 year period instead of the 3 or 4 year period that what is going to happen is that they are just going to delay any decision?

MR. DELANEY: I don't think so. I think if they find a solution which in their minds is a permanent method of disposing of this waste that the waste that is being stored in various generating plants around the country would be moved into whatever depository is decided to be safe and permanent and practical. I think we should perhaps keep in mind - I'm not sure how many generating plants there are in the country, 60 or 70 - apparently nobody in the country, "nobody" being no utility in the country, is moving the waste out of the generating site into a permanent facility because it just doesn't exist. And I don't think it exists anywhere in the world, at least not to meet our standards and specifications - ours being the United States government. Mr. Picco mentioned what the Russians have done. Apparently, in the fifties they just buried this debris and apparently it was inadequate. We're trying to find something that is adequate.

ASSEMBLYMAN STEWART: You have no suggestion as to how we might bring this thing to a head?

MR. DELANEY: I think it is a technical problem. I think the State or the Legislature can convey to the various groups and the one that is an inter-agency review group which I understand is made up of representatives of the Department of Energy ---

ASSEMBLYMAN STEWART: Let me ask you one more legal question, I guess. The question of CAFRA came up earlier. Are we preempted as far as our CAFRA rules and regulations are concerned? Are we wasting our time having a CAFRA review?

MR. DELANEY: I'm really not sufficiently familiar with CAFRA to give you any advice in that area.

ASSEMBLYMAN STEWART: We're talking about preemption. Under our CAFRA law we had to give a permit for Salem II. It was based on certain guidelines for the storage which are now being changed. If your preemption argument holds water, it preempts everything, our CAFRA law included. Then we are wasting our time with CAFRA law as far as nuclear facilities are concerned. Is that an accurate conclusion?

MR. DELANEY: I'm not sure. I couldn't give you any advice on that. I'm not sure what CAFRA is based upon. I think it is based upon, in one sense, some authority granted to the State from the federal government. I don't think that the California decision is based upon a CAFRA-type statute.

ASSEMBLYMAN STEWART: You may be giving us another way to approach the problem.

MR. DELANEY: Possibly.

ASSEMBLYMAN STEWART: By the way, I don't mean to use initials. The CAFRA zone is the coastal zone around the State of New Jersey for those who aren't familiar with it - the Coastal Area Facilities Review Act. That's what we're talking about.

MR. DELANEY: In my opinion, I'm not trying to provide support for the bill, but I think the California case is mandatory reading to get a flavor of what the federal law says and how the courts are interpreting the federal law and how they perceive what the states are attempting to do. And I think the judicial perception of the various state actions will have a lot to do with it.

ASSEMBLYMAN STEWART: Isn't there a Maine statute also?

MR. DELANEY: There is a Maine statute. I happen to have it here.

ASSEMBLYMAN STEWART: Has that been ruled ---

MR. DELANEY: No, not to our knowledge. We just checked the end of last week. Nobody has challenged it - challenged the statute. Basically that statute reads the commission - I assume it is a commission similar to the Board of Public Utilities - "shall not certify any nuclear power plant until the following condition is met. That condition is, the commission finds that the United States government through its authorized agency has identified and approved a demonstrable technology or means for the disposal of high level nuclear waste." Now, according to their statute, as I read it, a nuclear power plant cannot be certified for operation pursuant to the statute. But, apparently there has not been a challenge. And I don't know why there hasn't been a challenge. It could be there is no nuclear power plant about to be constructed up in Maine. I see the Legislative Aide is shaking his head. That's probably it, there is no controversy. They are passing a law which is not impacting upon any individual or any corporation or any group.

ASSEMBLYMAN BASSANO: In your opinion, don't you think this legislation would let the federal government know in no uncertain terms that we want them to stop procrastinating on this issue and come up with a solution to the problem in light of the fact that it has existed since the Kennedy administration - its been passed from one administration to the next with no decisions being made?

MR. DELANEY: I think that if the bill were enacted, the group that it is going to affect the most or bring the most response from probably are the utilities

who construct it and the investors who have provided the utilities with the money. The federal government is aware of the problem, at least to my mind. Because of the various reports and the amount of money being expended by the federal government, they are aware of what is going on. They are aware of concern probably of the states. There is certainly no harm in a legislative resolution being sent to the President, to the federal Department of Energy bringing that home.

ASSEMBLYMAN BASSANO: The difference between legislation and a resolution is that a resolution is an act of futility. This is a lot more concrete right here. That's number one. Number two is the fact that we're talking now about 17 years on-site storage indicating to me that the federal government is again going to procrastinate in the area. They're not going to make a decision. It's going to be passed along further and further.

MR. DELANEY: I think the federal government, basically, is supporting the use of nuclear power for electric generation. This problem is a thorn in the side of anyone who is in favor of nuclear power. If it could be solved, it would knock out one of the major issues that the anti-nuclear groups are concerned with. If it could be solved quickly, it would be solved quickly. Apparently, it cannot. A law that would perhaps cause serious concern to major utilities, not only in the State but perhaps some of the biggest utilities in the country, would gain a lot of press and probably incite a law suit and would bring the issue to the attention of the federal government. And if I'm right on the legal issue that the supremacy clause of the Constitution prohibits this type of a statute where will we be at the end? We'll just have the statute knocked out and a lot of good money spent for no good reason. If you are sure in the beginning that it's unconstitutional, it seems a little bit of a futile act other than a symbolic act to pass the law. If you are convinced, on the other hand, that the law is constitutional, that you can win a suit or that no suit will be filed, I guess if it is the will of the Legislature, they can enact the law.

ASSEMBLYWOMAN McCONNELL: Mr. Delaney, you pointed out that the federal government certainly is aware of the problem. And is spending enormous amounts of money studying the problem in order to come up with some kind of solution. It's been a number of years. Do you get the feeling that they may never find a solution? That there may not be a safe viable solution to the storage of nuclear waste? That concerns me a little bit. We talk in terms of profit, economics, and energy needs, you know, I think it is far better to stop at this point and say, "What is the solution?" If there is no solution, maybe we'd better stop now.

MR. DELANEY: I don't think the federal government, or the President of the United States, or Mr. Schlesinger, or any of the utilities here are going to guarantee anybody. They don't guarantee anything.

ASSEMBLYWOMAN McCONNELL: I understand that, and I'm not putting the onus on you or the utility companies. But I'm talking about the federal government. The matter seems to be in their hands and yet they've been studying it, spending a lot of money trying to come up with answers. And I don't see any answers. I think New Jersey and other states have to say to the federal government, in some way, whether it is by legislation or its by resolution or whatever, but in the strongest way possible, we want some answers before we can continue down that road of unknown facts.

MR. DELANEY: I think there are potential solutions. They are examining them. Those potential solutions are being investigated. But they are not certain

at this point whether they are the perfect or the most reasonable solution. I don't think that anybody can guarantee today that in 3 years or 5 years or 8 years that there is a solution. They expect there is going to be a solution. I assume the reason the federal government permits the plants to operate is that they have a number of good alternatives. They are trying to seek the best alternative.

ASSEMBLYMAN STEWART: We will be having the Department of Energy and the NRC people to testify before us probably some time in the next couple of weeks.

ASSEMBLYWOMAN McCONNELL: On this issue?

ASSEMBLYMAN STEWART: We'll be able to pursue that issue with those folks at that time. I think Assemblyman Barry has a question.

ASSEMBLYMAN BARRY: I would just like to understand the extent of the storage problem in New Jersey. We have two reactors in operation and four under construction. To your knowledge, are there other facilities on the drawing board at this time or are we talking about six reactors and that's it for the State?

MR. DELANEY: We're talking about --- Well, I gave you a list of dates. One is supposed to come on line in 1979, the latter part of this year. You have Salem II. 1983 was the scheduled service date for Forked River but construction has been suspended. 1984 is Hope Creek I and 1986 is Hope Creek II. Now, to my knowledge at this time, there is nothing else on the drawing board. But, you can be sure, and that's almost a decade into the future, there is a demand forecasting 10 or 15 years into the future as to how much electricity is going to be needed at that time to meet the demands of the people in New Jersey, the industry of New Jersey. Although there may not be any specific projects being considered or under construction at this time, something is going to have to be out there in the 1990's and the year 2000 to provide service. We've got one of the oldest nuclear power plants in the country which is Oyster Creek. It has been on line since 1968, and has a life of 25 to 35 years. So, that will be going off line in 1968 plus 35. Something else is going to have to be coming down the line to pick up lost generating capacity.

ASSEMBLYMAN STEWART: On that question, I don't know if you have these figures or not, do you know what the storage time is at those sites? For instance, at Oyster Creek what is the capacity there for storage? What does their permit say they can store there?

MR. DELANEY: I don't have those figures.

ASSEMBLYMAN STEWART: Do you know figures for any others, Hope Creek?

MR. DELANEY: No.

ASSEMBLYMAN STEWART: O.K. Norman Miller, our Staff Aide has a technical question, I believe, on some of the amendments you proposed.

AIDE MILLER: I want to go back for just a second to the question of the use of the words "rate base" you introduced at the outset of your testimony. What is required to make the bill technically sufficient in respect to this - anything more sophisticated than a change of the phrase "rate base" to "rate structure" or "rate schedule" or simply "rate"?

MR. DELANEY: You'd have to switch some words around but basically from what I understand the intent of the bill is to prohibit O & M expenses related to these specific sites from being included in a calculation that arrives at a final revenue requirement which is obviously old. Old expenses of the company whether they are capital or operating expenses, cost of securities, etc., are ultimately passed on to the consumer.

ASSEMBLYMAN STEWART: Thank you. The next witness is Bill Saller, Office of Government Affairs, General Manager of PSE&G, followed by William J. Steigelmann,

Chairman of South Jersey Chamber of Commerce Energy Committee, State Advisory Council.

W I L L I A M S A L L E R: Thank you sir. Good morning. My name is Bill Saller and I'm General Manager of Governmental Affairs for Public Service Electric and Gas Company. Public Service thanks you for the opportunity to present its views on A-3037 as introduced by Assemblyman DiFrancesco. A-3037 would amend that section of the New Jersey statutes which provide for the establishment of utility rates and would prohibit the Board of Public Utilities from allowing any costs incurred from the maintenance and operation of a nuclear fission thermal plant from being included in the rate base unless facilities for the reprocessing of spent fuel and permanent storage sites for radioactive wastes are available. According to the statement accompanying the bill, "The purpose of this bill is to prevent more nuclear power plants from becoming operable in New Jersey before the question of the disposal of spent fuel rods and permanent nuclear waste is settled." That's the first sentence of the statement.

Public Service fully supports any constructive action which would attempt to expedite the resolution of the spent fuel issue by the federal government; since the indefinite deferral of a decision on the reprocessing and subsequent recycling of spent fuel places an unreasonable burden on the nuclear power industry and the electric consumers in New Jersey. However, Public Service contends that a ban on further nuclear operations in New Jersey until reprocessing facilities are available would not expedite the solution at the federal level.

Spent nuclear fuel from commercial reactors had previously been reprocessed in the United States and is currently being reprocessed in several foreign countries. For example, Japan ships its spent fuel to England for recovery and recycling.

Reprocessing and recycling would permit the valuable remaining nuclear fuel to be extracted from the spent fuel for use in reactors. This would lessen by one fourth the demand for new uranium for fission reactors, thereby easing the pressures on the market place. Reprocessing is technically feasible and economically advantageous; however, it is only an option and not a requirement for the nuclear fuel cycle in electric generating stations.

Subsection 1 of section e of A-3037 further confuses the roles that reprocessing and permanent repositories play in a resolution of the spent fuel issue. This section prescribing one of the conditions to be met by the BPU provides that, "The Board finds that the United States, through its authorized agency has approved a technology for the construction and operation of nuclear fuel rod reprocessing plants and permanent, radioactive waste sites and that facilities with adequate capacities to reprocess nuclear fuel rods and store the permanent, radioactive wastes generated from a power plant..." This seems to imply that both reprocessing facilities and permanent repository sites are necessary for a resolution of the spent fuel issue which is not the case.

The federal government which has indefinitely deferred the reprocessing of spent fuel, fully accepts and recognizes that permanent repositories are technically feasible and accepts the responsibility for the operation of these sites. In a major policy statement on October 18, 1977, the federal Department of Energy announced that "the Federal Government is proposing to accept and take title to used, or spent nuclear reactor fuel from utilities on payment of a one-time storage fee." This was reiterated in the final version of the inter-agency review group's report on nuclear waste management issued just last month in March 1979.

Congressional committees have been conducting hearings on the general topic of spent fuel storage. Furthermore, specific legislation which would provide the necessary mechanisms to implement the federal policy have been introduced in both Houses of Congress and will be the subject of careful consideration. The federal government which has the jurisdiction over nuclear spent fuel storage has taken appropriate actions to resolve the issue and it is highly unlikely that a moratorium on additional nuclear operations in New Jersey would be constitutional.

Public Service contends that the proposed legislation is unconstitutional on the basis of the Doctrine of Federal Preemption since the states have definitely been preempted from regulating matters concerned with radiological health and safety involving the construction or operation of nuclear power plants. Two recent federal decisions support this position. A memorandum of law on these cases is attached to my comments.

In addition to any consideration of the constitutionality of the proposed legislation, Public Service contends that the effects of this legislation on the electric consumers and the State must also be examined. New Jersey utilities like most northeastern utilities depend upon nuclear fuel to meet their customers' energy requirements. If additional nuclear generation is prohibited, utilities will be forced to opt for electric generation powered by more costly fossil fuels. We should recall that during the past several winters, Public Service has relied heavily on nuclear power - in fact over 30% at times - first because of the Arab oil embargo then because of the natural gas shortage, and finally because of the coal strike. Any increase in the cost of fuel or energy is paid by the customers and this would most certainly have an adverse effect on the economy of our State.

Thank you for the opportunity to present our comments. I have attached to my comments two pages concerning Federal Court decisions - recent decisions - involving legislation in other states that were similar to this. And if I may, rather than reading the whole thing, just give some excerpts from the first page of this memo.

On January 10, 1979, the Seventh Circuit Court of Appeals in a case involving the National Resources Defense Council vs. the Nuclear Regulatory Commission stated that the Commission is required neither to conduct a rulemaking proceeding requested by a petitioner nor to determine that high-level radioactive wastes can be permanently disposed of safely prior to issuing nuclear power reactor operating licenses.

Again, in connection with federal preemption I would like to quote from the California case. The court stated, "Section 2021 paragraph c provides that the NRC shall retain authority and responsibility with respect to the regulation of the construction and operation of nuclear power plants and with respect to the regulation of nuclear waste disposal. In the exercise of its discretion, the NRC has decided not to require the existence of a technology for permanently disposing of nuclear waste as a condition precedent for the construction and operation of nuclear reactors." Later on they also stated that the court finds "... the question of whether nuclear power plants may be constructed and operated in the absence of a demonstrated technology for the permanent disposal of nuclear waste is exclusively reserved to the NRC by section 2021 (c) and that state regulation on this subject is displaced." There are other comments on there but I think you can read them. I'd also like to comment, Mr. Chairman, you indicated there have been many questions concerning what the federal government is doing or is not doing. And in October 1977, the federal Department of Energy held a number of meetings in connection with this

matter and I would strongly suggest you have - and I believe you are planning to - someone from the federal Department of Energy here since it is their responsibility to respond to questions concerning what is happening at the federal level in connection with the plans for the storage, temporary and permanent, of spent fuel.

ASSEMBLYMAN STEWART: You might be interested to know that at a meeting of the National Council of State Legislators there were several representatives from states who have nuclear facilities. They had John O'Leary the Deputy Assistant. In response to my question about what are we doing about the storage of nuclear wastes, his only response was, "That's a 10¢ issue which we can solve very easily." And that was the extent of his discussion with the National Council of State Legislators on how they're going to solve that problem. I hope we get a better answer than that when they come to see us. Some of the questions we were asking earlier to get down to where everyone knows what we are talking about in New Jersey, do you have the figures, or does anyone with you have the figures, as to what is the duration of storage in New Jersey now at various sites?

MR. SALLER: I believe both at Salem I and II and Hope Creek I and II the storage capacity there is as originally was approved for approximately 4 to 5 years of spent fuel.

ASSEMBLYMAN STEWART: I realize that the other facilities are not your facilities, but do you know if the same applies there?

MR. SALLER: No, I don't know anything about the storage capacity at Oyster Creek or Forked River.

ASSEMBLYMAN STEWART: So, in each case someone has asked for or will be asking for an extension from 4 years to 17 years?

MR. SALLER: Yes.

ASSEMBLYMAN STEWART: I know the request has been made for Salem II so can I assume it has been made for Salem I?

MR. SALLER: It has been made for Salem I and II, I believe but not for Hope Creek I and II.

ASSEMBLYMAN STEWART: On the question that comes up reading through the CAFRA permit, what exactly are we talking about? What are we storing? What are we going to be storing? Can one of your people with you enlighten us as to what they were talking about when they were talking about storing of uranium and plutonium oxide fuel rods?

MR. SALLER: We discussed that briefly before. Salem was grandfathered in under the CAFRA and Hope Creek was approved under CAFRA. The permits that were obtained under CAFRA were for construction only. Now, when we applied for additional spent fuel capacity, whether this is considered as new construction or just ---

ASSEMBLYMAN STEWART: Well, my first question is what in the world are we talking about? Is that the type of fuel rod that you will be storing - the uranium and plutonium oxide fuel rods? Is that what you are storing at Hope Creek?

MR. SALLER: I'll defer that question to our fuel engineer. This is Louis Sonz who is a Nuclear Fuel Engineer with Public Service Electric and Gas Company.

L O U I S A. S O N Z: In the storage issue, you are storing spent nuclear fuel. Nuclear fuel starts as just a uranium fuel under the present designs but during radiation plutonium is created. So, when you discuss spent fuel you are talking about uranium and plutonium because plutonium is in service in every operating reactor. It is created during the radiation.

ASSEMBLYMAN STEWART: First qualifying by saying I don't have the slightest idea what we're talking about when we're talking about that subject, other than the fact that in the CAFRA permit it does get into specifics on the storage of uranium and plutonium oxide fuel rods. In fact, it says that they will not be permitted at that site unless a waiver is obtained later. Now I guess my next question is, to your knowledge, has a waiver ever been obtained later?

MR. SONZ: We have our Assistant General Solicitor here who is familiar with what the requirements were in the CAFRA permit.

RICHARD FRYLING, JR.: As I understand the terms in the permit, they are talking about using plutonium recycled fuel and the CAFRA permit is an attempt to prohibit us without going back to amendment of the CAFRA permit. The fuel that we are planning to use is the regular uranium fuel not the plutonium recycled fuel. In other words, the plan at the time we were going through the hearings was we were hoping that the recycle option would be available. It is not yet available so we would not be using it.

ASSEMBLYMAN STEWART: So this definition is not the definition that fits what you are going to be storing?

MR. FRYLING: That's correct.

ASSEMBLYMAN STEWART: Several members of the Committee have toured your site in Salem and have seen the tank, I guess for the lack of a better word, the storage area. Some members may not have had the benefit of that and also maybe some people here would like to know. Could you give us a brief description of how you intend to store on site and what your change from 4 to 17 years means - your re-racking and all that sort of thing?

MR. SALLER: If you can visualize a large swimming pool approximately 40 by 60 feet top view and about 30 to 40 feet deep, this is filled with water. This is the size of the spent fuel pool and this would handle approximately one and one third of the total fuel that's in the reactor. Since about one third is replaced every year, it's four thirds or it's enough for four fuel changes since we replace about one third a year. In our application to store more fuel, we are not asking to enlarge the size of that spent fuel pool - that 40 by 60 or so I mentioned. What we are asking for is to provide for changing the racking of the fuel rods that are stored so that we would be able to store more spent fuel rods in the same pool.

ASSEMBLYWOMAN McCONNELL: Excuse me. Do these rods go in the pool?

MR. SALLER: Yes they do. They are held in racks and by rebuilding the racks and coming up with new racks, and rearranging racks, we would be able to include more spent fuel rods in the spent fuel pool. This would take us through a period of about 17 years. A time period of 17 years has been mentioned a number of times as the period of time that the government is going to come up with an answer. I think that has worked its way in because it is 17 years that we will have sufficient capacity for our spent fuel at the reactor site if our application is approved by the NRC for what we want to do there. The federal government will probably come up with something in 8, 10, 12 years.

ASSEMBLYMAN BARRY: On the alternatives here, the alternatives of permanent storage and reprocessing, I, frankly, don't find the storage a particularly attractive alternative. You mention that currently we do have reprocessing going on - you mentioned England in particular. What is the state of the art of reprocessing of nuclear waste?

MR. SALLER: I think perhaps Lou Sonz may comment better on that than I.

MR. SONZ: I'm afraid I can't give you a very detailed technical explanation.

ASSEMBLYMAN BARRY: I wouldn't understand it anyway.

MR. SONZ: The French and the English and the Japanese to a lesser extent and the Germans are working on the methodology. When we talk about reprocessing, we're talking about recovering materials from the spent fuel and reusing it. When we're talking about waste disposal we're discussing either taking the spent fuel and disposing of it directly or after reprocessing taking the elements that are not to be recycled and disposing of them. The exact methodology of the English and French, German and Japanese I'm not too sure of. I know the wastes are combined in the matrix and extremely stable, essentially it is a rock formation, and then that is encapsulated and the ---

ASSEMBLYMAN BARRY: I take it we're not talking about a 100% reclamation. We're going to end up with some endproduct that must be disposed of?

MR. SONZ: There must be some portions that must be disposed of because they have no value.

ASSEMBLYMAN BARRY: But what is preventing us from at least engaging in some sort of reprocessing at this time?

MR. SONZ: That's the federal administration's position that in the course of reprocessing you will tend to accumulate quantities of plutonium that they are afraid will be considered attractive for divergents. So they don't want to accumulate them so they don't want to reprocess.

MR. SALLER: This was President Carter's non-proliferation policy. If you recall, a few years ago, he shut down a few of the reprocessing plants just because in the reprocessing of the spent fuel you generate plutonium which can be used in bombs. Anything that made plutonium he was concerned about. He was against foreign countries getting this technology or others getting their hands on the plutonium. That's where the political decision was made to not have reprocessing. But, other countries have done it for military programs. It is being done now by the military.

ASSEMBLYMAN STEWART: Back to the CAFRA permits again. I just want to be sure I have that first issue finally solved. I'll read you the sentence out of it and you can tell me we aren't talking about this type. It says, "It is also clear as PSE&G has pointed out in comments to the DEP that fuel rods containing a mixture of uranium and plutonium oxides could be used to fuel Hope Creek." Then it goes on to say that that is only a possibility. Now your answer was that the final decision was that type was not used. Is that right?

MR. SONZ: No, it is not used.

MR. FRYLING: That is the recycled fuel which we are not allowed to use at this point under NRC regulations.

ASSEMBLYMAN STEWART: O.K. Fine. Good. As far as the CAFRA issue of storage the way you understand it, isn't your CAFRA permit based on the fact that you would only have temporary storage and at that time your NRC permit was for four years?

MR. SALLER: All our permits are based on temporary storage.

ASSEMBLYMAN STEWART: Has there been a move to go back to CAFRA for another permit now?

MR. SALLER: I'll defer that to Mr. Fryling.

MR. FRYLING: I have not looked at the permit or the statute with a view of going back to DEP for an amendment of the CAFRA permit. My offhand reaction is that the amendment of the NRC operating license to provide for the condensed storage of the fuel rods would not be a change that would be subject to CAFRA because it is not a new construction. And, therefore, CAFRA would not apply. However, that is just an off-the-top-of-my-head type of thing.

ASSEMBLYMAN STEWART: Just from reading over this thing, obviously, it is not new construction but it is one of the conditions of your original permit and obviously it is being changed now. I guess we'll have to touch on that subject later. I'm sure you will be doing some research on that subject. One other thing that is mentioned in your CAFRA permit is the handling of the solid waste on the site - the used equipment. Let me see if I can get the exact definition of what they are talking about - bulky items such as, air filters, miscellaneous paper, rags, liquid from your waste processing system. How is that handled now? Is that stored on the site? Is that taken out somewhere? I'm talking about stuff that is contaminated now.

MR. FRYLING: That basically is stored on site. Some of it is worked on. When there is an adequate amount there it is just taken off site at this point. This is low-level waste.

ASSEMBLYMAN STEWART: Where is it taken?

MR. FRYLING: Right now it is going down to Barnwell, South Carolina.

ASSEMBLYMAN STEWART: They mention that there is waste taken out in 55 gallon drums. Is that the same type of stuff we are talking about?

MR. FRYLING: That's right.

ASSEMBLYMAN STEWART: How long is it kept? Is it kept just long enough to get a large supply to make it worthwhile to move it?

MR. FRYLING: Yes. That's it.

ASSEMBLYMAN STEWART: Where is it kept? Is it protected somehow?

MR. FRYLING: I'm not sure physically where it is kept. It is kept in seismic parts of the plant. It is guarded and so on, but exactly what part of the plant, I'm not sure.

ASSEMBLYMAN STEWART: It says that the NRC estimated that 230,000 pounds of radioactive solid waste would be shipped annually from, I guess, this site. Does that make sense to anybody?

MR. FRYLING: I have no idea.

ASSEMBLYMAN STEWART: O.K. Does anyone else have any questions? In our tour of your facilities it was obvious to most of the Committee that you have the same concern that we do about the federal government doing something about this issue. In 17 years if your permit is approved and they don't do something, you are going to be out of business. You are going to have nowhere to go except rerack again. Do you have any suggestions, positive suggestions? You say that this particular bill may be unconstitutional. What tools do we jointly have, maybe, to get the federal government to do something on this issue?

MR. SALLER: I was happy to hear, Mr. Chairman, that you are planning to have someone here from the federal Department of Energy on this subject matter. Because, I know we have attended many meetings down in Washington on this, received literature as to what their plans are, and perhaps at that time we will find out more what their schedule is. Whoever does come down, if you can get someone from Dr. Schlesinger's office, I'm sure they can take your opinions and the opinions of the Committee back with them and express the concerns of the State and of the utilities.

ASSEMBLYMAN STEWART: My final question will be the question we asked of everybody and that is - can you enlighten us a little bit on what added dangers the storage is going to have as it relates to the accident in Pennsylvania? The fact that we have 4 or 17 years of spent fuel on the site, how would that affect us in the event we have a similar situation?

MR. SALLER: Mr. Chairman, I'd like to respond to that. As far as Three Mile Island goes and the incident there, like many others we are also awaiting a report from some official agency on that to find out what did happen. Our storage facilities for spent fuel at Salem are remote from the reactor itself and outside the containment building, as far as I know.

ASSEMBLYMAN STEWART: Were they storing at Three Mile Island? It is a new plant, maybe they didn't have anything stored.

MR. SALLER: They just started up. I can't answer anything about Three Mile Island.

ASSEMBLYMAN STEWART: The average New Jerseyman had no idea what they were talking about when they said there was going to be a meltdown. What were they talking about? Were they talking about an explosion that would have occurred and would have released any stored material?

MR. SALLER: The storage area is remote from the reactor. I think this is something we would have to look at. I think there would be less likelihood of anything happening but to say offhand or to guarantee nothing would happen, I don't think we can make that statement at this time.

ASSEMBLYMAN STEWART: It certainly doesn't decrease the dangers. That's for sure. I don't want to get into a related subject which is the location. In doing some reading through this permit again, I was shocked and I'm a resident of that area, at the importance of that particular Delaware River channel. If we had had the same problem at Salem that they had in Pennsylvania, I was concerned about what it could have done to the economy of the whole Northeast because of someone blocking off that channel and saying, "We don't want any traffic on it," "We don't want this, we don't want that." But some of the statistics that come out are staggering about how busy the Philadelphia port is, for instance. And this facility and four facilities are going to be storing nuclear waste at the mouth of that channel. It bothers me that everyone keeps saying that we can't do anything about it and everyone agrees it is a problem and jointly we aren't doing something to force someone's hand. Are you convinced that it is going to be 1990 before we get any solution?

MR. SALLER: We're hoping it is sooner. The original schedule that they set up when they had their first meetings in October '77 or had a number of meetings on this subject, they were shooting for the mid 1980's, if I recall, to start storing spent fuel away from the reactor sites. That may have slipped a couple of years to the late 1980's, 1983.

ASSEMBLYMAN STEWART: I don't want to keep rambling here with questions but we're getting into the public portion very shortly and some of these questions we have to know the answers to before we get to that. Could you touch briefly on the decommission problem you see. You had to also in your CAFRA permit talk about how you are going to decommission the plant. Now we're talking about the possibility of having to decommission a facility 17 years from now that has 17 years of spent fuel sitting there. How do we do it?

MR. SONZ: I don't think decommissioning ever considered leaving the fuel on site.

ASSEMBLYMAN STEWART: What are we going to do with it?

MR. SONZ: The federal government repository.

MR. SALLER: The fuel storage area is a temporary fuel storage area and that was the way it was designed. It is not for permanent storage.

ASSEMBLYMAN STEWART: Maybe I'm wrong but I remember the CAFRA meetings and we were constantly told that unless the storage issue could be solved, the CAFRA permit would not be issued. And it was contingent upon solving the storage problem. It's obvious we haven't solved it which makes me wonder whether the permit is a valid permit anymore.

ASSEMBLYWOMAN McCONNELL: I just wanted to pursue a question that was raised a while ago. You said that you hoped the federal government will resolve this problem by mid 1980. I think you are speaking in terms of some remote place, a federal government repository which means that you will then take either 4 or 17 years of spent fuel and transport it to this location. Do you think that that is going to be the eventual answer?

MR. SALLER: That's what they are planning to do. They are looking into various salt mines in the West, reprocessing plants, ways of transporting it and ways of storage. There is a lot of literature on it.

ASSEMBLYWOMAN McCONNELL: Have they solved the problem of safety in transportation?

MR. SALLER: Yes. The Department of Transportation has requirements in connection with the transportation of the radioactive material and it is rather rigid. I don't recall the statistics but the canisters that they are stored in, the trucks themselves have to withstand, I think, a 60 to 80 mile an hour impact and very high temperatures, submerged under water, just about everything, before it is approved.

ASSEMBLYWOMAN McCONNELL: Does it bother you a little? Do you ever wake up in the middle of the night and think - what if the federal government doesn't solve this problem? What's going to happen to future generations? And we're stuck with this spent fuel here.

MR. SALLER: I think ultimately they are going to have to face the issue and they are facing it and will come up with a site. This is where I think someone from the federal Department of Energy can respond to your questions much better than we can. We are just as anxious as anyone to solve this problem. Our plants were designed and built for just a short storage period. And then the spent fuel was to be transported to a government facility or other facility for either reprocessing or storage. That is what was planned.

ASSEMBLYMAN STEWART: Thank you very much. Next we have William Steigelmann, Chairman, South Jersey Chamber of Commerce, Energy Committee, State Advisory Council.

W I L L I A M S T E I G E L M A N N: Good afternoon, gentlemen and lady of the Assembly. The South Jersey Chamber of Commerce is pleased to have this opportunity to present their comments on Assembly Bill 3037. Before I begin I'd like to preface my remarks by these few caveats. Number one, I personally prepared this testimony without much time for collaboration with any other members of the Energy Committee or the Chamber itself due to lack of time. But it is my understanding, sincerely, that this reflects everyone's views. Further, I want you to understand that I have no vested interest in the nuclear power industry any more than any other citizen of New Jersey has. I am a professional consulting energy engineer who does consulting work with nuclear power but 10 times more with solar energy. I am rather familiar

with the Salem, Hope Creek, Oyster Creek, and Three Mile Island plants. But, I am not professionally involved with them.

The South Jersey Chamber of Commerce represents over 600 business and industrial companies in Burlington, Camden and Gloucester counties who employ approximately 70,000 people. My name is William Steigelmann, Chairman of our organization's Energy Committee.

This bill concerns nuclear power, and indirectly seeks to inhibit the further use of this energy form in New Jersey. I would like to address - head on - some of the basic realities of our current energy situation and nuclear power's necessary role.

The South Jersey Chamber of Commerce has consistently held and proclaimed the belief that nuclear power is a vital and necessary ingredient in the energy supply system of both the United States and, most particularly, of New Jersey. At our Energy Committee meeting last Thursday, the committee unanimously reaffirmed this belief. The events at the Three Mile Island Nuclear Generating Station during the past dozen days have in no way diminished our support of this energy technology. In fact, it has strengthened it. The accident at TMI Unit 2 should not have happened. It might be said that every accident of any type is preventable and this aphorism is true in this instance also. The important points that should be recognized are:

1. A serious accident did occur, but no one was physically harmed as a consequence.
2. A partial meltdown of a reactor core occurred, but the important safety systems functioned properly.
3. A great deal of radioactivity was released within the plant, but radioactivity releases and radiation exposures to the public were mild. To quantify this last point, the extra radiation dose received by some individuals may have been as high as 85 units, which is the same as getting 2 or 3 chest x-rays, or of living for a year in the mountainous regions of Colorado. This exposure is less than 3% of the amount that is regarded as safe for those whose occupation causes them to be involved with radioactivity.
4. Many mistakes were made, and the danger was real that the situation might have been worse, but some individuals in the media, in government and in special interest groups have shown a shameful lack of regard for the public by seeking to exploit and exaggerate the situation, causing more concern than was warranted.
5. This particular type of accident was unexpected and proper defenses for it in terms of certain valves and pumps were not provided in the plant to deal with it but the perfect public safety record of nuclear power, extending over more than 20 years, remains intact.

Now it is the time to analyze what happened at TMI, to learn from the mistakes, to further improve the design of the plant and their operating practices, to ensure that accidents like this one will not occur again. It is not the time to work toward abandoning nuclear power. In 1978 nuclear power provided 31% of New Jersey's electricity based upon planned additions already under construction, this would grow to about 50% during the next 10 years. It is unlikely that the fraction of our electricity produced from nuclear energy would increase beyond this amount, at least not in this century.

The demand for electricity has been rising only gradually in the Garden State, due to conservation and the exodus of industry from the State. This situation will not continue much longer because the easy part of conservation has already been done and further improvements will be expensive to implement, hence slow in coming. And, the State simply cannot afford to lose any more jobs. The Governor and the Legislature have and are continuing to give this problem their attention and we are optimistic that economic conditions will be improved sufficiently that we can once

again attract new jobs, in addition to holding onto the ones here now.

So more electricity will be needed and the plants to provide it are under construction. But, Assembly Bill 3037 would have the consequence of stopping this progress. We have not had the opportunity for a detailed review of the specific language of the bill, but it appears that it would block any funding of these plants even after they are completed unless the Board of Public Utilities issues a finding that the federal government has established licensed spent fuel reprocessing and radioactive waste disposal facilities. The "Catch 22" in this is that the federal government has already adopted the policy of not having reprocessing facilities for nuclear fuel from commercial power plants. Therefore, under this policy, the BPU cannot issue an affirmative finding and there will be no way for the utilities to ever recover their cost.

So why do we have this proposal? Why seek to block the only technology that enables us to simultaneously be independent of OPEC and have minimum environmental effects. The only practical alternative to nuclear power in 1979 and 1980 is to generate more electricity in existing power plants fueled with expensive imported oil. The excess natural gas that was available temporarily is now virtually all spoken for and industry is concerned that they will face shortages in the mid 80's because of the diversions already approved. Coal has much more severe environmental effects than does nuclear power. Perhaps some of the technologies for providing clean energy from coal will be suitable and available by the late 80's but they are not available today. If they are available and can produce electricity more cheaply than nuclear, we want the utilities to use them. If for any reason they do not so choose, the regulatory framework will require them to do so anyway. Some persons believe that the energy obtained by burning solid waste is sufficient to eliminate the need for nuclear power. We fully support the concept of energy recovery from wastes but we are fully aware that: 1. There are many environmental problems to be solved and 2. Mechanisms do not exist to ensure that sufficient quantities of wastes are available to generate appropriate amounts of electricity.

Finally, there are those who say solar energy can free us from the need for nuclear power, perhaps they will be right in 20 to 30 years but they are most assuredly incorrect at present. The technology to generate large quantities of electricity from sunlight does not now exist and cannot exist for at least 10 years. After this, it takes years and years to build enough power plants to provide enough power to be significant, and, unfortunately, the environmental effects of solar energy are not insignificant.

In closing, I would like to note for the record that this articulation of our position was prepared by me alone, as I indicated it does reflect the consensus of the Energy Committee and the Board of Directors as well. We didn't have time to get a broader input to this statement. As a professional engineer who has been personally involved in energy technologies ranging from nuclear power to solar energy to conservation, I am urging that the Assembly, through this Committee, not take any actions to foreclose the nuclear power option. The consequences to our State's economy would be severe in terms of higher energy costs for both individuals and businesses, leading to a decreased living standard and loss of employment opportunities. As was stated above, there simply is no safer technology available now to generate electricity when the term "safe" is looked at in its truest meaning. Your positions in government carry with them the responsibility to look beyond the claims of those who, for various reasons, are adamantly opposed to nuclear energy but who

can offer no better practical alternative to meet present-day needs.

Thank you for this opportunity to present our views.

ASSEMBLYMAN STEWART: I have no questions. Thank you for your testimony. I would like to say though, so we don't have a debate starting from pro and anti-nuclear forces here today, that we do want to stick to the issue of the storage of the spent fuel. Our present speaker got a little off the track, I think. What I want to discourage is that someone would feel he has to come up here and respond to that testimony. We don't want someone to come up and give his opinion of why we don't need nuclear power in New Jersey. Try to stick to the issue of storage. Like the present speaker, if you have some introductory remarks to lead into it, that's fine. But try and stick to just the waste issue if you can so that we don't get into a prolonged debate.

MR. STEIGELMANN: Yes sir, but our point was, that is preempted.

ASSEMBLYMAN STEWART: I understand your point. It's all part of the issue and I understand it completely and I think everybody does. I didn't want to stop you because I know you were leading to the point and we understand that. But the bill we are talking about doesn't ban nuclear construction in the State and we want to make that clear. So, if anyone is here to support banning nuclear construction in the State, we're not talking about a bill to do that. We're talking about solving the problem of storage. We understand your arguments as to why we should continue and we understand the arguments of the opponents who say we should stop. All I'm trying to do is condense it down to this one issue. Our next speaker, and we have time for probably one or two more, let me give you two names so if the rest of you want to take a break for lunch you can. We have Edward Lloyd from the Public Interest Research Group and if time permits, before a quarter to one we'll get to Ted Peck, League for Conservation Legislation. And then we'll come back at about two and pick up where we left off. Mr. Lloyd.

EDWARD LLOYD: Thank you. My name is Edward Lloyd. I'm Director of the New Jersey Public Interest Research Group, (PIRG). I'd like to thank the Committee for this opportunity to testify on Assembly 3037. PIRG's basic position is we support the concept of the bill. We'd like to suggest a few amendments, some technical, some policy. I think the Committee has heard quite extensively this morning what they can't do and some legal problems with this bill. I'd like to offer some suggestions as to how both the technical and the legal problems can be remedied so that this bill would be constitutional and would be well within the authority of the State. First, I would agree with the comments of the Department of Energy and the Board of Public Utilities Commission with respect to rate base. I hope that those problems will become corrected. I think it is merely a technical language change. I would also suggest that perhaps nuclear fission power plants should be defined somewhere in the bill so that it is very clear what we are and are not talking about. Finally, as the BPU pointed out, operation and maintenance costs do not go into the rate base. I would suggest that the bill be amended to prohibit construction costs. In that way, that is the substantial cost of the nuclear power plant, that is the cost that bears most heavily on the rate payers. I believe also, if construction costs were banned at an early stage in the planning, we would not face the legal argument of a taking. If, in fact, the utilities were put on notice early in the process that these construction costs were not to be included in the rate base there would be no question about a taking. Finally, I'd like to address the preemption question which is the one, I believe, of the greatest concern. It is my opinion that if this bill were amended to change its intent and clearly relate its intent

to the costs of waste disposal and the cost of reprocessing, those issues are well within the jurisdiction of the State. In fact, I believe that the State's duty is to protect the consumers of this State from the costs of waste disposal and reprocessing. And unless these issues are addressed before plants are licensed, you are, in effect, giving the utilities a blank check to cover these costs. It is clear that if we build those plants and the federal government ultimately charges the utilities for the reprocessing and for the waste disposal, those costs will be passed on to the consumer. I believe it is the duty of this Legislature as well as the Board of Public Utilities to examine those costs before authorizing construction funds to be spent by the utilities. We can't examine those costs until we know what the technology is going to be that's going to be used to reprocess and dispose of wastes. It is for that reason that I think it is a legitimate concern of the State to seek a decision from the federal government on what those technologies will be before they license or authorize construction. I just would like to say a word, since it came up earlier, about CAFRA preemption. I believe that the State would be on much more solid ground in the area of the Board of Public Utilities Commission and the area of costs of related disposal problems with nuclear power, on better ground, than they are with the CAFRA language which deals more, I think, with the safety and health of the public than does the BPU regulations dealing with costs. In fact, PIRG appealed the granting of the Hope Creek permit and among the grounds that we appealed on were the waste disposal issue. And the New Jersey Appellate Division ruled that, in fact, that issue was preempted under CAFRA. I don't think the same problems would be faced with BPU because the cost regulations clearly within the authority of the State are much more clearly so than perhaps the safety and health issues involving CAFRA. Finally, I want to make a few comments, and I'll keep them very short, about economic issues that I think should be of concern to the Legislature. I realize they are not addressed in this bill. In amending it you might consider putting some of these findings in as well. I think we should all be concerned with the economics of nuclear power when the plants are not operating. It has been an issue for years. It has been brought home clearly to us in the Three Mile Island situation because that plant may well never operate again. And it is a real question as to who should pay both for the replacement of fuel which is going to be more expensive, for the cleanup, for the decommissioning of that plant and, in fact, for the downtime of that plant right now. Jersey consumers are going to be faced with those questions because Jersey Central owns 25% of the plant. It is an issue that I believe should be addressed by this Legislature with respect to proposed plants and plants now under construction. Thank you.

ASSEMBLYMAN STEWART: I don't know if you personally were involved ---

MR. LLOYD: I was the attorney representing PIRG in that case. In the Hope Creek case.

ASSEMBLYMAN STEWART: Fine. That's what I wanted to know. Are you satisfied with the answers regarding the plutonium rods? Were our answers we received accurate?

MR. LLOYD: Right now, the plutonium on-site fuel will not be used because of federal and State regulations. With respect to the waste disposal, I haven't looked at the permit in some time either but I would suspect that Public Service should come back in for an amendment of that permit if they intend to expand the facilities at the Hope Creek plant.

ASSEMBLYMAN STEWART: Yes. The permit says "temporary" but it does not define temporary and obviously they were talking about a time duration at that time of 4 years. When you multiply that by 4 that brings a question as to whether that is still temporary. We are starting to get the opinion also that maybe some legislation or amendments or something dealing with the CAFRA bill may be a way to go. You mention that in your intervention you were preempted because of CAFRA. Could you explain that a little bit?

MR. LLOYD: We were preempted, or the court ruled that we were preempted, from raising the waste disposal issue with the federal government. CAFRA says that a condition may be placed on the plant, that if the waste disposal problem is not solved - very similar to this language - based upon environmental concerns, I think there is a more serious concern in respect to CAFRA on where the federal authority ends and the State authority begins. The reason I believe we are on more solid ground with the Board of Public Utilities is that traditionally states have set the rates consumers will pay for electricity.

ASSEMBLYMAN STEWART: You think we are on more solid ground with the BPU?

MR. LLOYD: Yes, I do.

ASSEMBLYMAN STEWART: Oh, I misunderstood you. I thought you said just the opposite.

MR. LLOYD: Oh, I'm sorry. Yes, I think we are on more solid ground with the BPU than we are with the Department of Environmental Protection.

ASSEMBLYMAN STEWART: O.K. I'm glad I got that straight. The issue of the decommissioning of the plant as it applies to their CAFRA permit - do you recall the scenario that went on after that was, or I assume there was, a decommission plan filed?

MR. LLOYD: I believe that one of the conditions in the Hope Creek permit was that a decommissioning plan be filed. And I believe it has been. I have not reviewed it. Again, I think we are on more solid ground with decommissioning if we talk about the costs of decommissioning which must be borne by the consumers. Until we know what those costs are, and there are estimates varying from for a plant the size of Hope Creek from \$50 million on up and I've seen estimates up to a billion dollars to the cost of the plant itself, dismantling would cost as much as the construction ---

ASSEMBLYMAN STEWART: Do you want to comment on the question we have been asking everyone about what the 17 years of fuel would contribute to the dangers of that site?

MR. LLOYD: Yes. I believe I would agree with the other witnesses who said that the relationship between the operation of the facility and the waste disposal if, in fact, there is a serious accident with operation, the additional harm from the waste disposal may not be incrementally significant. I think those are the words Steve Picco used. I think the concern, however, may be that if we have 17 years worth of fuel in that pool, there is some danger. Again, I'm not a nuclear engineer either, I would think there would be some danger of something happening to that pool. The pool was originally designed to hold 4 years and they are not talking about enlarging the pool. They are just talking about putting four times as much waste in that pool. As I said, I'm no expert on this but I have some concerns about trying to put that much waste in that same pool, and perhaps the harm that would occur to the pool.

ASSEMBLYWOMAN McCONNELL: In your testimony you made a suggestion - let me see if I can clarify that - that rather than the legislation specifying that operating and maintenance cost should not be contained in the base rate that construction cost should be the criterion used. Are you then suggesting that utility companies should not be allowed to pass their own construction cost on to the consumer or did you say that, in relation to the construction cost, it should not be allowed to be included in the rate base until the waste disposal issue has been resolved, reprocessing the waste disposal?

MR. LLOYD: Yes. I think that is what I intended to say. The construction costs are the significant costs ---

ASSEMBLYWOMAN McCONNELL: So do you think we are getting the cart before the horse kind of thing in this legislation?

MR. LLOYD: In a way. I would agree with you that the operation, maintenance costs also shouldn't be included in customers' rates. But the real issue is the construction costs. And the utilities, I believe, should be given the signal early in the process, early as possible, that they should not undertake these construction costs or assume these construction costs until this problem is solved. By doing that, I think, (1) you put them on notice so that there is not an unfair change of the rules after they have spent a billion dollars, also there is the matter of the rate base. What is the rate base? It is the capital expenditures and they are the construction costs. So, those are the costs you want to deal with. If, in fact, you prohibit the construction costs from going in, you are never going to get the operating and maintenance figure. I would presume you are not going to have a plant.

ASSEMBLYWOMAN McCONNELL: So then you would be talking about any future construction of nuclear plants in New Jersey?

MR. LLOYD: Yes, I believe so. I think there is a serious question as to the Salem II plant, because it is 90% built, whether the Legislature would want to have this Act apply to those plants. With respect to Hope Creek in Forked River, however, I believe they are 10 to 15 percent constructed. It may be in the State's interest to put the utilities on notice now not to spend any more money until we resolve this problem.

ASSEMBLYWOMAN McCONNELL: O.K. One other question. It has been said many times here that nuclear power is cheap, is cost effective, it is perhaps environmentally cleaner than some other sources, however, I think we've seen recently that what happened at Three Mile Island is not going to be an inexpensive thing for any of us. You made the suggestion that, well you talked about the economics of closed plants should there be that kind disaster in the State of New Jersey. Do you have any recommendations to make to the Legislature or to this Committee as to what we should be doing or could do to either build up a fund or to be prepared in the event that one of our nuclear plants did have an accident as to how we could avoid passing that cost on to the consumers?

MR. LLOYD: Yes, I do. I think that those are some of the issues that really should be considered when the Board of Public Utilities examines the construction program of the utilities. Something that we should take into account is the fact that the nuclear plants have not performed up to their expectations even before Three Mile Island. In fact, the larger ones have been averaging some 55% of their expected capacities. I think some legislation would be in order to direct that in a year in which the plant does not perform - I would say this is open to discussion - at more than 50% of its capacity that that percentage of non-performance

should be removed from the utility's rate base the following year. I think we have to protect the consumers of the State from the situation at Three Mile Island and similar situations around the country where the plant breaks down for whatever reason. The customers continue to pay rates based upon the capital investment in that plant - a billion dollars - get no electricity from that plant, have to pay in the fuel adjustment clause, the increased cost of purchased power from other sources, usually more expensive, and then, in the Three Mile Island situation have to pay for cleanup and decommissioning as well. I think that that is a valid area for examination for the Legislature and the Board of Public Utilities. We have been talking about presenting the Legislature with proposed legislation. We would be happy to pursue that with you.

ASSEMBLYWOMAN McCONNELL: What is your position on nuclear power, generally?

MR. LLOYD: Our position over the past 5 years has been in opposition to nuclear power because of the safety question, because of the economics, and because of the waste disposal issue.

ASSEMBLYMAN STEWART: The last question I have is: There have been many people who have said to us that they can't understand our concern on the waste issue because it is a very safe technology - the storage of spent fuel rods submerged in the pool. And, whether they are going to be there for 4 years or 17 years doesn't matter because they are just as safe for 17 years as for 4 years. As a matter of fact, they are safe for a longer period of time. Would you care to comment on the safety of storage?

MR. LLOYD: I would give you a layman's comment, again, I'm not an expert. I'm afraid I'm not overly confident in the federal government's ability to regulate nuclear power and the waste disposal issue. There are 100 generic proceedings still open before the NRC - generic problems with nuclear plants that haven't been addressed. Technically, I don't know, as I said before I'm a little concerned about quadrupling the number of fuel rods in that pool without increasing the size of the pool. I just think we need to look very closely at the costs of that kind of storage, that kind of waste disposal. I'm concerned about the safety. But, in the forum of the New Jersey Legislature I think we're on soft ground with respect to jurisdiction and federal preemption. I would prefer to stay on the firm ground of economics and the economics of all of these issues because that is where the State has the greatest interest. I think that is where the greatest concern is of the consumers of the State.

ASSEMBLYMAN STEWART: Is there a tremendous difference in cost because of the change of 4 to 17 years, for instance? Or isn't that an argument we should have made a long time ago?

MR. LLOYD: The cost of storing on site, I believe, isn't that much more significant. In fact, it may even be less costly to store on site with the 17 years. The cost that I'm concerned about is the ultimate reprocessing or disposal costs. Those may be extremely significant and extremely high. And those are the costs that we need to examine because ultimately I think they will come back to the rate base.

ASSEMBLYMAN STEWART: My fear is seeing the feds sitting there saying it is too expensive to move this stuff, it is cheaper to leave it there. That's not what we want.

MR. LLOYD: It think it is very possible that that could be a result. We would have then 72, 200 repositories around the country, which would be of major concern.

ASSEMBLYWOMAN McCONNELL: This is the question that bothers me. Has any thought been given by the federal government as to what the cost is going to be to transport, to reprocess or to dispose? Do you have any testimony on that?

MR. SONZ: There have been studies on determination of charges for spent fuel shipping and disposal. The studies are going on. Disposal is a concern for the military waste as well as for the commercial waste.

ASSEMBLYWOMAN McCONNELL: But in these studies, you are considering the cost factor?

MR. SONZ: Oh, yes.

ASSEMBLYWOMAN McCONNELL: Everybody keeps talking about cheap, cost effective - yet I wonder if all the factors have been considered. Do you agree with that?

MR. SONZ: I think they have been considered. What we are awaiting is the final decision.

ASSEMBLYWOMAN McCONNELL: So we really don't know, do we?

MR. SONZ: We don't need the solution; we need the decision.

ASSEMBLYWOMAN McCONNELL: I'm sorry, Mr. Chairman, I didn't mean to just talk to the whole audience.

ASSEMBLYMAN STEWART: By the way, we are going to wrap it up with this witness. So, if the next witness whom I had told to be prepared is still here, I would advise your grabbing a bite to eat. The question comes from our staff that the construction cost was purposely left out of the bill because of the problem of preemption, and I guess the question is, do you feel that gets us into more dangerous waters as far as federal preemption is concerned?

MR. LLOYD: I don't know that the preemption is the concern there. I think perhaps a taking is of greater concern. If, in fact, a company has invested a billion dollars in a facility and you prevent the operation and maintenance costs from being written off, I think they have a very good argument that you allowed them to invest that money you now can't deny them both their operating and maintenance and their profit on that plant. I think you are on much more firm ground if you say to them, "Do not spend any money in construction until we resolve this problem." That way, they are not putting their money out with an expectation of putting it into the rate base and, in fact, you don't have to address the taking issue. I don't think the preemption issue, in that instance, is the one that's of concern. I think the taking issue is.

ASSEMBLYMAN STEWART: O.K. We will recess until 2 o'clock.

(Lunch recess)

AFTERNOON SESSION

ASSEMBLYMAN STEWART: We will start the second session, the afternoon session, of the hearing on A-3037. I'll repeat a few of the ground rules in case someone came in late. Please try and stick as closely as possible to the issue of Assembly Bill 3037 which deals with the storage of nuclear fuel in this State. Secondly, if you have a written copy of your testimony, please give it to us as you come up. And, thirdly, if you do have a written presentation, as far as the record is concerned, it is not necessary to read the whole presentation. You can summarize it but your complete written testimony will be part of the record. I

do want to emphasize again to stick to the issue of Assembly Bill 3037 so that everyone here will get a chance to speak, hopefully, before 4 o'clock at which time we are supposed to vacate this area. Our next witness is Ted Peck, League for Conservation Legislation followed by Margaret Wasson, SEA Alliance.

T E D P E C K: Mr. Chairman and distinguished members of the Committee and staff, I welcome the opportunity to speak with you today on behalf of the League for Conservation Legislation concerning Assembly Bill A-3037. I was talking to Bill Singer at lunch and he said you were tired of seeing his face at these hearings so, he also wants you to know there is an organization behind him.

So, I would like to say that the League for Conservation Legislation is a coalition of New Jersey environmental groups. In fact, most of the environmental groups testifying here today are affiliated with the League.

I would also like to just parenthetically raise a protest here on the fact that you interviewed the corporate lawyers and executives and bureaucrats in the morning and then in the afternoon when we environmentalists speak, and I think we are a lot more eloquent than they are, the TV cameras are all gone. The nuclear debate, I think, is in the political arena where it should be and to give them the TV coverage, I think, is an unfair advantage. I'd like to see you try to do something about that.

ASSEMBLYMAN STEWART: That looks like a TV camera right there, I don't know.

MR. PECK: Well, New Jersey Public TV is here but the major networks have gone home.

ASSEMBLYMAN STEWART: A lot of people sitting here maybe are not aware that you can call ahead of time to have your name added to the list. That's how this list is determined. Evidently, some of the people were used to being at a lot of public hearings but we don't pick these names out of a hat. This is how you people have contacted us and you were put in that order. So, it was certainly not intended to put one group in the morning and one in the afternoon or anything like that. But, I appreciate your comments. Please continue.

MR. PECK: The intent of A-3037, as we understand it, is to bring to a halt all construction of nuclear energy facilities in New Jersey until all questions of public health and safety have been resolved.

Insofar as the bill is likely to achieve this purpose, the LCL supports it.

In fact, I would like to remind the Committee that in June, 1976 in its "Energy Conservation Plan for the State of New Jersey", LCL called for a moratorium on the construction of nuclear power plants in our State pending the resolution of seven conditions relating to public health, safety and economics. Since that time, all seven of those conditions have grown worse, not better. The time for a moratorium is long past due.

I ask you to view with extreme skepticism the assurances from Harrisburg and Washington and also in this room today that no lives have been lost as a result of the accident at Three Mile Island. It has long been known that there is no safe level of radioactivity. A number of studies published during the last two years have indicated that workers and members of the general public who have been exposed to levels once considered acceptable have been dying of cancer and leukemia. The Environmental Protection Agency is in the process of setting standards of exposure far lower than those now set by the NRC. And, of course you all heard the estimates in recent days what might have happened at Three Mile Island if we hadn't been lucky.

A-3037 concerns itself with the problems of nuclear waste storage, of

spent fuel rods in particular. It should be pointed out that the fuel rods lying in the storage pool at Oyster Creek contain far more radioactivity than the fuel at the very young reactor at Three Mile Island; in fact, far more radioactivity than was released at Hiroshima and Nagasaki. The reactor at Salem is presently being refueled, which means that for the first time spent fuel rods are being stored there as well. These pools, as we've heard today, were meant to be temporary storage, not permanent, but they will remain there, a deadly threat to everyone in South Jersey, for the foreseeable future, since, as we heard today, there are no operating facilities for reprocessing or permanent storage. To allow more plants to be built while this situation prevails, we feel, would be criminal folly.

However, A-3037 must be amended in order to be effective. As drafted, it would allow a utility to proceed with construction of a nuclear plant, charging its ratepayers for construction work in progress, on the assumption that by the time it was completed solutions would have been found to the problems of reprocessing and permanent waste storage.

This is basically in agreement with what Ed Lloyd of PIRG just said that once the plant had been built, there would be irresistible pressure on the BPU and the Legislature to allow it to operate so that the company would not lose its billion dollar investment.

To be effective, the bill must prohibit the inclusion in the rate base not only maintenance and operating costs but also all construction costs of plants not in operation when the bill is passed.

In addition, section e(1) of the bill requires, as a precondition for inclusion of these costs in the rate base, a finding that technologies for reprocessing and permanent waste storage are in actual operation or will be in operation at the time a facility becomes operable. Will be in operation - this last clause we find unacceptable. For the last thirty years the government has been promising, each year, that a permanent storage facility would soon be ready, yet the solution continues to recede into the future. Previous speakers today have gone into this point in some detail. The precondition for plant construction should be that permanent waste storage facilities be in operation, not that they may be at some future date.

The LCL has an extensive library of information concerning these matters and contacts with individuals at Princeton and elsewhere who have spent years studying the problems involved. We would be happy to assist the Committee in its deliberations in any way we can.

In closing, I would like to note that while our primary concern is with health and safety, the economics has swung over to our side too. The Princeton economist, Hazel Henderson, has said, "After Three Mile Island, no one ever is going to tell us nuclear power is cheap again. It can't be both safe and competitive in price."

I'll end my prepared remarks there and restrain myself from the temptation to answer some of the things that were said this morning. I know other people are going to address those.

ASSEMBLYMAN STEWART: Thank you, we appreciate your sticking to the purpose of the bill. Are there any questions? I wonder if you might just comment on the point we made to someone this morning that there are some who say that they don't understand all the hullabaloo. What's the difference if you store on the site for 4 years or longer, say for 17? Are you satisfied that the expansion of the racks is a safe system? And are you satisfied even with 4 years of storage that the technology is there to safely store the spent fuel on the site?

MR. PECK: I'm skeptical, I'm very skeptical about this whole process. As we heard, this was designed as temporary storage and the nuclear technology is such a demanding technology that I'm afraid that any change you make, as was said, in the middle of the road could lead to serious problems.

ASSEMBLYMAN STEWART: The way I understand it though it is not a change in the structure of the storage vault, it is strictly a re-racking procedure which allows them to keep more in there. So really, the swimming pool is the same swimming pool that was going to have the spent fuel in it anyway. Right? It was going to have it for the whole period of time. Do you have any feeling whatsoever on the expansion of the racks, that technology?

MR. PECK: That is my primary concern that they are increasing the density of radioactive elements in there. I'm sure that if you lost your cooling fluid in the pool you could quite possibly get a chain reaction.

ASSEMBLYMAN STEWART: How might that happen?

MR. PECK: Well, I'm not that familiar with the technology but we read every day about leaks of water in nuclear plants in one place or another. And I certainly wouldn't guarantee that it wouldn't happen in this area also.

ASSEMBLYMAN STEWART: Thank you very much. Margaret Wasson from the SEA Alliance. By the way, when you come up, give your name before you start.

M A R G A R E T W A S S O N: My name is Margaret Wasson and I'm here today to deliver testimony on behalf of the Central Jersey SEA Alliance concerning Assembly Bill 3037. We would first like to state that we heartily endorse the spirit of the bill, namely, the prevention of more nuclear power plants becoming operable before the long-term waste storage problem has been demonstrably solved by the federal government - a long-awaited event that appears just as elusive now as it was 25 or 30 years ago both in terms of technology and, indeed, the economic terms of who will pay for it. We find, however, on close inspection of the bill that there is a serious and, indeed, we feel, a critical omission. The bill neither mentions nor addresses itself to construction work in progress. The money is charged to the service customer to help finance the actual construction of nuclear power plants. On inspecting Public Service Electric and Gas Company's 1978 stockholders' report on page 32 we find listed, "Net Utility Plant, four billion three hundred and sixty three million two hundred and ninety seven thousand dollars." Construction work in progress accounting for "one billion thirty three million two hundred and forty nine thousand dollars" of that - a rather large proportion of the total. It is well known that utilities cannot maintain or sustain an adequate cash flow from the investment or money market to finance nuclear plant construction and thus have had to turn to its customers for the funds it lacks. It is apparent that if the bill passes in its present state with CWIP and the rate base, the utilities will continue to build nuclear power plants as scheduled. At the point of completion, the utility will challenge the validity of this bill and be able to point to an in excess of a billion dollar investment that is unusable. We believe the economic arguments that the utility would have to offer at that point in time would be strong enough to entirely negate this bill. Central New Jersey SEA Alliance proposes that an amendment be added to the present bill to state that no utility will be allowed by the Board of Public Utilities to incorporate into its rate base any construction work in progress for new nuclear power plant construction started after the date of the passage of Assembly Bill No. 3037. The events at Three Mile Island are still very much in the minds of many. We have been assured that the crisis is passed in terms of danger to the public health, an assurance that is in direct contradiction to the work of many distinguished members of both

the scientific and medical community. The official assurance that the imminent danger is past, however, has served to bring into focus the enormity of the economic aspects of the problem. Staggering costs become apparent both in providing ultimate sources of electricity at an estimated million dollars a day and the awesome cost of decontamination, repair, and what is more likely, decommissioning and entombing of this billion dollar fiasco. The consensus of opinion is that, of course, the public will have to pay. Just how the public is supposed to in the face of alarming general inflation in the cost of life supporting necessities is not spelled out. We urge the members of this Committee to study the economics of the whole nuclear fuel cycle and the thermal efficiency of the whole cycle. We were told this morning that the nuclear industry will help us gain an independence from foreign oil cartels. Yet, America has dwindling uranium reserves and a foreign uranium cartel is already rumored. We are warned to support expanded nuclear development because the return to the heavy use of coal is environmentally unsound. Yet, the largest strip mine in America is operated merely to supply fuel specifically for a uranium processing and enrichment plant. Events at Three Mile Island demonstrated for the public an alarming credibility gap in both the representatives of the industry and the officials appointed to protect public safety. The public now needs the truth - the truth that nuclear fission was born in subsidy and can only survive in subsidy, from massive grants from the public pocket for research and development to heavy subsidy in fuel processing, enormous federal tax relief, direct capital transfers as in CWIP, insurance subsidies, and the government funding of waste storage, and, of course, the cost of a huge bureaucracy that is supposed to regulate the industry. If nuclear fission was as economical, as safe, and as clean as it is purported to be by its advocates, surely one does not need a Ph.D. in economics to see that no subsidies would be necessary. And, now we see in this worst case of an accident the public again is expected to absorb all these losses. New Jersey's future has been planned with heavy nuclear involvement with areas of the South already being referred to as future nuclear parks. PSE&G has lodged a request with the NRC to quadruple its on site spent fuel storage. Many New Jersey citizens are getting the uncomfortable feeling that the federal government might just choose this State to become the national zone of sacrifice and mandate us to accept wastes from other areas of the nation. In the future, we will have our hands full and our pockets empty trying to cope with the large-scale toxic pollution that has resulted from too many poorly run trash dumps and chemical wastes. Let us not add another dimension to an already dismal picture. We would support and endorse the present bill as long as it contained the suggested amendment. Such legislation is long overdue in a State already staggering under varied and gross pollution.

Just a couple of final comments: We have been told this morning that we need nuclear power. We would like to state that the utilities in this State already have doubled the federal suggested excess generating capacity. All the utilities in the last year have had to drop considerably their future estimated need because of conservation. And in the case of reprocessing, we have already had in this country three different reprocessing concerns who have found it, after a while, commercially unviable. And in the case of the New York company, they declared bankruptcy and left the corroding wastes leaking into Buffalo's aquifer and expected the state to pick up the cost of decontamination. And, also, with the English reprocessing, there was an enormous fire at Winsgale where many of the men were irradiated and are now no longer allowed to live a conjugal life with their wives because their perspiration is so highly radioactive. That is just a brief history of reprocessing.

The SEA Alliance thanks you for your time and the opportunity to testify in this important matter.

ASSEMBLYMAN STEWART: The only point I'd like to ask you about is, I assume you understand just from discussion with the sponsor, and from statements he made, his reason in setting the criteria he did. This Committee is going to have to make the decision as to whether or not we should go further than the sponsor did. But, I think I can speak for him. His reasoning is that if we go too far, if we had included the construction costs, then we certainly would be infringing in an area where we have limited, if any, authority. We will be whistling in the wind, we'll end up with nothing. His feeling, and the feeling of those who spent the time working on this bill, is that we do have the authority to get involved in this subject as long as we don't get carried away and come out with an outright moratorium which, according to recent court rulings, has been preempted by the federal government. I hope you are not saying to us that unless we go that route your organization cannot support this bill. We have to pass something that can (1) pass here and (2) can withstand the courts. I don't think any of us disagree that maybe that would be a great idea if we could pull it off. It would really have the effect of getting to the NRC. But, it might also have the opposite result and we'd wind up with nothing. That is the reasoning anyway.

MS. WASSON: I see.

ASSEMBLYMAN STEWART: Any questions? Thank you very much.

MS. WASSON: Oh, there is one final thing. Reading matter was suggested to this Committee this morning, may we also recommend this government report entitled, "Nuclear Power Costs"? It was the twenty third report by the Committee on Government Operations. It certainly is good reading. And it does address some of the issues we are dealing with. Thank you.

ASSEMBLYMAN STEWART: Thank you very much. I apologize to the Sea Alliance for spelling your name all this time. Next is Carol Barrett from the Sierra Club.

C A R O L B A R R E T T: My name is Carol Barrett and I'm Conservation Chairman of the West Jersey Group, New Jersey Chapter, Sierra Club. The opinions I'm expressing this afternoon are from the national Sierra Club's positions on nuclear power as well as New Jersey. We are all agreed on the fundamental issues about nuclear power, in fact, years ago Sierra Club as well as most environmental organizations were hoping that nuclear power would be the answer, that we would get rid of the problems with coal and other environmentally hazardous and unhealthy systems of generating energy. But, in 1974 the Sierra Club Board of Directors decided that the issue, in particular the waste issue, was of such monumental concern and such a problem that the Sierra Club requested that no nuclear power plant be constructed until the problem of permanent storage of nuclear waste and decommissioning, which came later, was solved.

I'm not sticking to this prepared testimony because in listening to the testimony and Assemblyman Stewart, there are many other important things that come to my mind. Of course, everyone was brought to a halt with the incident at Three Mile Island. I was in Ohio at the time visiting my daughter. I was so panicky that I made my husband detour off Route 76 on to some mountain road. We almost were killed trying to maneuver the mountain roads. But, there is that inner feeling when you realize that you may be contaminated by radiation. You want to avoid it at all costs. We really feel a great deal of sympathy for the people in that area being so close, I can imagine how they must feel.

The language in this legislation we are discussing today is very narrow as Assemblyman Stewart pointed out. We would also ask that, if you are going to word it as it is, you would include the cost of construction. It probably wouldn't be workable to just deny them a rate increase for the maintenance and operation. It is the cost of construction which is the big issue and what the citizens have been paying for and will pay for into the future.

In this testimony I talked about the events at Three Mile Island. But they have been discussed and they are so much in the public view right now that it would be reiteration for me to go into it again.

As I said, in 1974 the Sierra Club issued a statement opposing the licensing and construction of any new nuclear plants. Since then the Sierra Club has set up a subcommittee. We have a Doctor Resnikoff from New York who is the Chairman. We also have hired Drew Diehl, at a great reluctance because we suffer from lack of money the same as other organizations do, with inflation. The Sierra Club, of course, is dependent upon its membership plus any donations. It is a non-profit organization. We have many professional people on our staff but we do not look forward to incurring new professional staff. We thought the nuclear waste issue was such an important thing for the country that we have hired an additional person in our Washington office, Mr. Diehl. He will work on a national campaign to further go into this waste issue. Of course, now you will have to add to that the decommissioning problem. The financial problem of decommissioning is terrific. Dr. Resnikoff, who is the Chairman of our subcommittee also worked for PIRG in New York. I included in my testimony a statement he made in 1977 regarding fuel reprocessing. I have it in front of me now and other testimonies that he has offered at Congressional hearings, also to President Carter about the radioactive waste situation. It is such a monumental problem. These were written in 1977. The Sierra Club has been overseeing all the handling of nuclear waste and reprocessing and decommissioning since it has begun. They have a very good record of what has occurred. There are horrendous problems with all of it. He can point out lacks and inefficiencies and the fact that we are expecting people to operate in a perfect manner at all times. We are expecting these institutions to be built perfectly. We are expecting people to perform perfectly and they can't do it. The unexpected happens, it is the old Murphy's Law. As far as depending on nuclear energy in New Jersey, I just feel dreadful about it. I've been a resident of New Jersey all my life. I live in south Jersey. I didn't worry about nuclear energy at all until the last years when Salem plant came up and I started to be concerned about it. I think the thought that we could become a national repository for spent fuel storage is abhorrent. We have a few natural resources left in New Jersey. In south Jersey we have some farmland left, we have the Pine Barrens. When I hear that they are going to put a plant at Forked River with the high cooling tower very much in sight of the Pine Barrens, then run the transmission lines through the Pine Barrens, through our beautiful forest because it is maybe cheaper or they can get the right of way, I just think it is disgusting.

I hope that this Legislature will address itself to this issue. Now that everybody is concerned about the issue of nuclear plants and New Jersey seems to be a big headquarters for it, if somebody doesn't take hold of the issue, it is going to get much worse insofar as the public reception of this goes. The public's perception of nuclear plants is that they don't want them.

As you can see, I have not bothered to read any of my testimony which I wrote yesterday on my birthday. Then, I traveled by bus to come here. So, you

can see that I am a concerned citizen. The Sierra Club would love to offer its professional assistance to this Committee and its experience and its research. Frankly, I can't see any reason why the Sierra Club can't help the way that industry does. Industry is often called upon to advise government officials. I think that organizations such as the Sierra Club should be consulted also. If there is any way we can make this information available, we'd be more than happy to. We have a tremendous amount of experience in it. Thank you very much.

ASSEMBLYMAN STEWART: We would like to have your Washington newly-hired expert get in touch with our Committee staff so we can discuss with someone on a national level the preemption problem. So if you could get his name to us ---

MS. BARRETT: It is in the report and the attached paper is from Dr. Resnikoff. I'm sure his records would be of immeasurable help.

ASSEMBLYMAN STEWART: Thank you very much for taking the time to come down here. Following Tina Weishaus will be Charles Wall from Burlington County College.

T I N A W E I S H A U S: My name is Tina Weishaus and I come from New Brunswick. I'm testifying for the People's Independent Coalition. The Coalition is a grass-roots multi-issue organization which is concerned with public policy decisions in areas of health, civil rights, labor, environment, women's rights, all areas of national priorities. We have worked with the Public Advocate and the Department of Health in the past on the survival of the Family Health Center at Middlesex General Hospital. Most central Jersey legislators are familiar with our work and concerns of our constituency which is growing significantly. Last Sunday night our membership requested an emergency meeting concerning the accident at Three Mile Island plant to which about 125 people came. Generally, they were concerned with the immediate and long-term consequences of the accident, the public's right to know what was going on, and the future costs, human and economic of nuclear energy in this State and in the nation. But, I am aware there is to be a general hearing on nuclear power and so I'll restrain my comments.

Regarding Assembly Bill 3037, its statement of purpose intends, "to prevent more nuclear powerplants from becoming operable in New Jersey before the question of the disposal of spent fuel rods and permanent nuclear waste is settled." The People's Independent Coalition wholeheartedly supports this principle but we feel that there are 3 major weaknesses which should be of concern to the Committee. These areas have been addressed by other people but at the risk of being repetitive, I feel I have an obligation to the constituency to repeat them.

The first area is the area of construction costs. The legislation, while preventing the utility from including operation and maintenance costs, does not deal with construction costs of these plants in the rate base. Construction costs are the major expense, costs which New Jersey citizens bear and will continue to bear. If construction costs were included in this bill, it would not only strengthen the legislation's intended purpose, it would quicken the search for a solution to the waste and reprocessing problems if a solution is possible. If a solution cannot be developed, it makes no sense for New Jersey consumers to subsidize never-to-be-operated nuclear facilities. Also, if construction without these solutions proceeds and plants are built, it will only pressure the federal and State governments at later dates to lower safety standards to enable these plants to operate.

The second weakness is that there are other problems and costs besides waste and fuel rods. They can be summarized as social, human and health costs,

which are real and which we are extremely aware of today because of the accident at Three Mile Island. Some of these include (1) nuclear power plants are not fully insured and there is limited liability in case of a serious accident, (2) the fact that utility companies pass all construction, maintenance and operating costs on to New Jersey citizens and no one now knows the long-term economic cost of waste disposal, down time, fuel replacement, and closing down or decommissioning of plants, (3) there has yet to be public disclosure of all scientific studies which discuss the costs of all forms of radiation exposure to our health and environment, (4) there has yet to be full public disclosure of the costs of past incidents and radiation leaks from nuclear reactors, transportation, and storage of waste, (5) there is no prohibition at this time preventing utility companies from increasing rates to consumers to cover nuclear accident damage to corporate property, expenses of controlling and shutting down reactors, and extra costs incurred by the substitution of energy sources when a plant is down, and finally, (6) there is no sufficient compensation funds to cover persons displaced, laid off, or injured from nuclear accidents and no fund has yet been set up for long-term damage to health from radiation. We feel that all of these costs to New Jersey citizens must be appraised in addition to costs of the waste and fuel rods before the development of a greater dependence on nuclear power is established.

The Legislature, the DEP, the Department of Health, the BPU, and especially the citizens of New Jersey do not at this time have the answers. We cannot, therefore, proceed. The Union of Concerned Scientists believes that, "Only immediate action can stop the incompetence, malfeasance, industry arrogance, and government insensitivity that is hurling us all toward the next nuclear accident." The People's Independent Coalition agrees with this.

The third area of weakness, I think, is one that hasn't really been addressed sufficiently. The United States government through its authorized agencies has not proven itself reliable in this area. Regrettably, the AEC, the NRC, and the Department of Energy have placed the fastest growth of the nuclear power industry before the safety needs of the American people. According to the Union of Concerned Scientists, those who would regulate and set standards for this industry have also been its strongest proponents. Over the years, they failed to carry out safety research that their own studies show to be badly needed. They consistently misrepresented to the public the hazards of nuclear power plants.

Assembly Bill 3037 will be strengthened if the Legislature in its power of negative veto can rely on independent authorities to call into question the approved means of disposal and reprocessing established by federal authorities. The People's Independent Coalition realizes that most legislation reflects compromise of one sort or another and few bills please everyone. Things, however, have changed since January 16, 1979 when the bill was introduced. The accident at Three Mile Island has brought home to millions of Americans the terrifying dangers of nuclear power. More and more citizens realize that this accident is the tragic outcome of policies by the nuclear industry and the federal government to develop nuclear energy in total disregard of health, safety, and the cost for the American public. Please do not underestimate the sentiment of New Jersey voters when it comes to the health of their families and the soaring utility bills which make it harder for them to provide for their families. Each day and each accident convinces them of the need for strong, consistent and courageous legislation in this area. Thank you.

I would like to add one thing about the construction costs. I believed

before I came to this hearing that there were states that had passed bans on incorporating construction costs into the rate base. It was reaffirmed by several of the spokespeople in the morning who said that California and Maine had done that as well as 15 other states that had restricted construction costs in one way or another. So, I would urge you to look into that area since it is something that the citizens of New Jersey feel very strongly about as represented by just about every group who has been working on the problems of nuclear power in this State.

ASSEMBLYMAN STEWART: I'm not sure about Maine but I believe California did have construction costs in it. The point is, that was overturned by the courts. That is what we are trying to prevent. We are trying to come up with something that won't be overturned. That's our dilemma. The California proposal may sound good and make good press as someone said earlier, but if it won't stand that test, it's not worth the paper it's written on. We're not fooling anyone by passing something that won't pass that test.

MS. WEISHAUS: I understand that. I guess we will investigate the Maine thing. Also, I heard that Connecticut passed a limit on construction costs. So, I hope you will look into it and we will look into it too.

ASSEMBLYMAN STEWART: We certainly will. In fact, there are quite a few other differences with the California proposal. Our staff and our people aren't 100% sure that if we adopted the construction amendment that you are mentioning that we would have the same problems they had because we have other differences. That's our concern at this point. We haven't even touched on that subject yet. Those are some of the things we are going to have to talk about.

MS. WEISHAUS: The other thing is that I think it would be fairly easy in the bill to incorporate an amendment, a resolution of disaffirmance which may be needed because you need to consult an independent authority. Because I think the fact that the NRC just allowed the Babcock nuclear plants, 8 or whatever throughout the country, to operate at full power makes people feel very, very uncomfortable with their ability to make a fair decision in favor of safety, knowing that those plants may, in fact, have design errors. So, I think, some independent monitoring is necessary.

ASSEMBLYMAN STEWART: What kind of an independent source would you recommend?

MS. WEISHAUS: I don't know. I imagine there are all sorts of experts that could be consulted that the Sierra Club has access to, or other organizations that deal in this. I have heard over the radio from an independent source in Maine who was monitoring the level of radiation in that state that it was high. Now this person worked out of the university. It came first through the university then the state Department of Health confirmed that. But, very often there is a cover up and a whitewash. The fact that there is radiation in the milk right now is not public knowledge. It has been in the papers but in small articles.

ASSEMBLYWOMAN McCONNELL: You obviously take a very strong position against nuclear power

MS. WEISHAUS: Generally we have a position.

ASSEMBLYWOMAN McCONNELL: It has been testified here this morning that 30 to 40 percent of New Jersey's electricity is generated by nuclear power. Assuming that the nuclear power plants were shut down and no more were constructed, what would you suggest as an alternative for power in the State of New Jersey or in the country?

MS. WEISHAUS: There have been a lot of rumors that there is an energy shortage. However, I believe that there are probably a lot of oil resources available

which are not being developed precisely because there is no economic incentive. Now we have the whole deregulation question of domestic oil. There probably are oil reserves in this country as well as ---

ASSEMBLYWOMAN McCONNELL: We have been drilling.

MS. WEISHAUS: Well, drill some more. I think that the money that is used, the millions and billions of dollars that are put into nuclear plants can be turned more effectively to develop safe - whether it be solar or just better and cleaner technology, for instance, for the burning of coal. We know there is plenty of coal but it is very dirty. As a representative of the constituency, I am here merely to speak to the fact that we feel that nuclear power is not safe. That is first and foremost. I think that probably the minds of this country can find energy sources. I'm concerned for the public's health and safety at this point.

ASSEMBLYMAN STEWART: Thank you very much. Charles Wall from the Environmental Action Student Group of Burlington County College followed by John Schoonover from the Fusion Energy Foundation.

C H A R L E S W A L L: In reading A-3037 one gets the impression that while the writers' intentions are just and emphatically expressed, the actual proposal is full of loopholes and weak stipulations. I agree with the argument stating the reason for concern over waste storage and that it is a problem that should be addressed now, not at some point in the future. The first two paragraphs under Statement are very good. They pinpoint the problem accurately. The time has come to answer this question before New Jersey becomes more involved in the field of nuclear power generation. But what happened to a potentially useful bill? In the wake of the Three Mile Island accident it seems prudent to postpone the building of any more nuclear facilities until a complete study has been made as to the safety, economics and necessity of nuclear power. Is a radioactive catastrophe a risk that each citizen is willing to take? Do we, indeed, have the constitutional right to life? The people of New Jersey should have the final vote. We should choose between nuclear and other alternatives. It should not be a decision left to the self-promoting industry.

This bill is not strong enough to halt the construction of new nuclear facilities. Why is CWIP still included in the rate base? Pennsylvania doesn't include CWIP, we don't believe New Jersey should either. The Governors Conference stood firm against the federal government's plan to dump radioactive waste on anything other than federal lands. The Legislature owes it to the people to stand firm, firmer than they have in this bill, against the almost wanton proliferation of nuclear power. This bill has good intentions but it needs some work. What you ought to be asking for is immediate moratorium on all construction of nuclear plants until a complete study has been made of their actual safety and necessity. If that report cannot justify the existence of a nuclear program or its superiority over renewable sources, then you ought to be proposing a scheduled phaseout of the plants already in operation.

Herein lies the responsibility to the citizens of New Jersey. And if you find these decisions too difficult to legislate, then the decision should be turned over to the people of the State. We should be able to choose our own destiny.

In answer to your question concerning an independent study group, I might suggest the Union of Concerned Scientists. And in answer to your question of should we eliminate the 30% of energy supplied by nuclear power what are the alternatives - cogeneration has unlimited capacity to supply a lot of our energy as far as industrial needs. Right now, solar energy can provide 40 to 60 percent of our heat and hot

water in its very young stage. Adding alcohol to gas would greatly increase that. We do have a lot of alternatives. They don't necessarily have to come from a single source. A combination of renewable sources would be a lot more advisable. Thank you.

ASSEMBLYMAN STEWART: Charles, don't leave yet we may have some questions for you. You brought up the same fact that everyone else brings up. You don't buy the argument that California's law has been overturned by the courts and ---

MR. WALL: As I understand it, Delaware right now has some moratorium bills.

ASSEMBLYMAN STEWART: That doesn't make it legal. You can pass any kind of law you want but to have it stand the test is another story. I have a favorite epitaph that once a year I get a chance to say. I'm going to use it here on you. It goes: "Here lies the body of John O'Day, who died maintaining the right of way. His way was right, his will was strong, but he is just as dead now as if he'd been wrong." The moral to that is, we can come up with all kinds of great laws to pass but if they won't stand that test, they are no good. We are fooling you and we are fooling the people if we pass something we know is not going to stand up. We have had people tell us that what we propose isn't going to stand up, let alone going one step further.

MR. WALL: Do you assume you couldn't propose a weaker bill should a stronger one fail?

ASSEMBLYMAN STEWART: Then what happens in the meantime? Construction continues, everything continues. Do you really think we are doing you a favor by sitting here and saying we're going to pass a law that bans nuclear facilities in New Jersey? Do you really think we are doing the citizens of the State a favor by passing a bill like that?

MR. WALL: Yes.

ASSEMBLYMAN STEWART: Do you really think it would stand up?

MR. WALL: I think it would be worth a try.

ASSEMBLYMAN STEWART: O.K. My personal feeling on that is that you would be the victim of a tremendous snow job because it just hasn't been the case in other states.

DR. JOHN SCHOONOVER: My name is Dr. John Schoonover. I am a nuclear physicist and the Director of Nuclear Physics Research for the Fusion Energy Foundation. Before I make the remarks which I have been considering, I'd like to say that I am an expert in the area of nuclear radiation and would be very happy to entertain questions on what, in fact, radiation is and any other pertinent questions. The reason I make this particular statement at this time is that I was surprised in listening to people's remarks by the old wives tales and boogey man stories that are passing for fact in this hearing today. I expected to hear a resounding guffaw when the woman from the Sea Alliance pointed out that these poor British nuclear industry workers were no longer allowed to have conjugal relations with their wives because they have hot armpits. This sort of tale carrying serves no purpose. It doesn't get anybody to the truth of what radiation is. Anyone whose armpits are so hot that he can't sleep with his wife is probably dead already anyhow. People are getting paranoid behind me. I don't know what is wrong with the lady.

The point that, I think, we have to consider in respect to A-3037 in particular --- There are several things at stake, (1) as was pointed out earlier by the industry representative, the techniques for reprocessing nuclear fuels exist. They are more than commercially viable. One of the first things we learned how to do with nuclear fuels during the 1940's was to reprocess it so we could make bombs

out of the reprocessed materials. It is a well-known technique. The commercial viability of it is beyond doubt. Other countries are outstripping us in developing the potential to carry out nuclear reprocessing. England has been mentioned, Japan, France, Germany, the Soviets any country with a serious interest in the development of nuclear power is developing those techniques. It is a valuable resource to recover fuel from spent fuel rods. As far as the storage of waste, again, the techniques exist to do this. They have been used. There are continually new techniques being developed. We are not dealing with an unknown monster in the dark. This is something that represents a very political question of whether, in the final analysis, the United States is going to continue to develop its nuclear industry or whether it isn't. You can throw up impossible-to-attain restrictions so that the industry can be stopped indefinitely. But, within any rational assessment of the benefits of nuclear energy for the United States and any rational assessment of the possibility of further development of the technology surrounding nuclear energy, there is no reason, and I underline the word reason, to halt the further siting of nuclear plants for some sweet bye and bye in which these conditions will be met. They have effectively been met.

Another major consideration is that the United States is an industrial country and New Jersey is an industrial state. If this country is to remain an industrial country to remain competitive in the world market with other industrial countries, to be able to continue to contribute the benefits to its citizens and to the world of being industrialized - living standards, general levels of culture, so on and so forth - then we cannot shut off the continued use of the most highly developed, the most advanced technologies that science has invented, created, evolved into useful technological products. In fact, if we were to revert to a coal burning society, in effect, we would be reverting to a 19th century level of technology and could not, in the long run, restrict that reversion to the 19th century simply to the area of energy production. The whole economic structure in terms of the whole technological level of the society would revert to that level in the long run. If we were to revert to a dependence on solar energy, we would, in effect, be reverting to something prior to the 19th century - something closer to the Middle Ages. Now, anyone who seriously considers what the United States' or any other industrialized society's reverting to the Middle Ages represents, you would not seriously consider putting further stumbling blocks into the development of nuclear energy. The Middle Ages is characterized by plague, famine, a much lower population potential which means that we would have to, in one way or another, allow to die or kill off significant portions of the population because we would not have the wherewithal to allow people to continue to live. It's as simple as that.

Now the implications of this reversion to a 19th or earlier than 19th century existence for the United States has tremendous implications in terms of national security. We do not live in a peaceful world, unfortunately. And, until, if it is possible to do so, we create conditions in which all countries of the world do live peacefully together, those countries who ignore the development of science and technology put themselves in a bind relative to countries who promote the development of science and technology. War fighting and war avoidance both are questions largely determined by the technological achievements that can be brought to bear in the war fighting process. The failure to continue to develop the nuclear industry and collateral high-technology industries, would have a very detrimental effect to the national security of the United States. I think it is very important that a State such as New Jersey which has a long tradition going back to the Revolutionary War period and before of fostering technology - up in Paterson we have the Society

for Useful Manufacturing and so on and so forth - and which is the site of many high technology development corporations - around the Princeton area and elsewhere - that a state with that kind of tradition and ingrained outlook cannot afford to find itself in the forefront of a movement to, in fact, quash scientific and technological development. It is important for the future of the development of nuclear energy in the United States that the State of New Jersey not submit to the kind of pressures that are represented in the amendment in Bill 3037, but, in fact on record maintain its present lead and accelerate that lead in the development of nuclear technology.

I think it has become the order of the day to make recommendations for people's reading list on the question of nuclear energy. I'd like to submit a suggestion in this area. A nuclear engineer at the University of Colorado by the name of Peter Beckman has written a very excellent book for the layman called, The Health Hazards of Not Going Nuclear. He discusses in great detail not only what nuclear radiation is, how nuclear plants work, what kind of safety measures are there, and then compares the generation of electricity and other power by nuclear means, with coal, so on and so forth. It becomes very clear when you look at the record and the potentials for further technological development that nuclear energy is and remains, and will remain, the safest, cleanest, cheapest, the most efficient form of energy production we have as yet developed. As you noticed, I'm from the Fusion Energy Foundation. I expect that some time in the near future that controlled thermal nuclear fusion which is another mode of generating energy using nuclei will, in fact, supersede nuclear fission. But, in the meantime, this is the best we have. There is no reason to run and hide from it. We should push full speed ahead to further develop it. That's all I'd like to say at this time

ASSEMBLYMAN STEWART: Mr. Schoonover, to get back to the bill that's in front of us today, we are looking at a chart that tells about the operational nuclear power plants in the world today - there is Canada, for instance, with ten - can you tell us what they do with their spent fuel?

MR. SCHOONOVER: I think Canada is still holding it in temporary storage. They may send some of it to Britain but primarily it is in temporary storage. The Canadian nuclear industry is somewhat newer than the American. Their plants are much younger.

ASSEMBLYMAN STEWART: What does Britain do?

MR. SCHOONOVER: They have reprocessing.

ASSEMBLYMAN STEWART: Do they service most of the other countries of the world?

MR. SCHOONOVER: As pointed out earlier, they do service Japan. France has its own reprocessing. I believe Germany does as well, the Soviets do.

ASSEMBLYMAN STEWART: Thank you very much. Next will be Mark Baribeault followed by Robert Bowen. I want to stress again to stick to the bill. I don't want to have to interrupt someone in the middle. Most of you have been very good about it but we are starting to wander.

M A R K BARIBEAULT: Mr. Stewart, Committee members, my name is Mark Baribeault and I'm here speaking solely for myself today. The question I would like to ask is: Must our race continue to poison its unborn descendents?

This is the underlying theme behind this bill and the larger question of permanent, proliferate commercial nuclear power generation lacking proper disposal procedures. Poison, in the form of air and water pollution, overpopulation, inflation and many others is certainly the legacy that was passed on to us, and it will

be the legacy we pass on to a greater or lesser degree. All the poisons we have known, however, will be as gnats should we allow the use of fission reactors to propagate further without knowing the full, long-range consequences of their use.

An alternative to conventional methods of power production is obviously necessary immediately, if not sooner, but at what cost? Do we disarm the Middle Eastern people of that pearl-inlaid dagger they hold at our throats merely to plunge it into our own underbelly? Or should we hand it to a terrorist or to some future enemy who will again hold it to our throat? Let's sit back a moment and rationalize.

The major advantages of nuclear fission as presented by the industry are cheaper, cleaner, more abundant energy and a greatly reduced need for Arab oil and other fossil fuels in short supply. Noble causes, to be sure, but I have yet to hear of a utility reducing its rates though 30% of our own electricity is of a nuclear origin. The disadvantages are many-fold.

Next to nothing is known of the long-range effects of consistent low-level doses of radiation on the body such as those that are received by persons residing in the vicinity of a reactor or storage facility, persons working at such an installation, or persons exposed to one-time, higher-intensity, accidental emissions. Nor is anything known of the prevention or treatment of these effects if, indeed, there is a prevention or treatment. Additionally, Dr. Ernest Sternglas of the University of Pittsburgh's Department of Radiology over five years ago related stack gas emissions from the Morris plant in Dresden, Illinois, one of the first boiling-water reactors, directly to infant mortality rates in the area. He found a perfect coincidence. Chance? A freak? Well, maybe. I have my conclusions and I'll leave you to yours, but have any of you seen photographs of children born to parents who received doses of radiation from Nagasaki or Hiroshima? I won't go into descriptions but is the potential creation of a race of such half-mutant monsters worth the price of that Arab dagger?

And the issue at hand is nuclear waste disposal. The term itself is inexact since the word "disposal" implies the conversion of waste to some other usable form, such as landfill or heat by burning. It should be nuclear waste guardianship for there is no known alternate use for these wastes and while recirculation is possible, their bulk must be completely and exclusively separated from the environment for at least one thousand years, for that's how long they are lethal, longer than the existence of any known government. The plutonium in these wastes will be lethally radioactive for fifty thousand years and the whole batch will still be harmfully radioactive in two hundred fifty thousand years, on the order of a millennium. This is longer than the entire recorded history of man. Can even the United States government guarantee integrity that long? Can we be so selfish as to produce these ominous byproducts to feed only our own power hunger? Surely solar or fusion power will be improved to the point of commercial feasibility in the near future.

The quantity of these wastes is yet another problem. Experts estimate at current growth rates that we will have one to two billion gallons of this highly radioactive fuel rod waste product to deal with by the end of the century. Until recently, these wastes were stored at the Hanford Works in Richland, Washington, among other places. There alone, there is 30 million gallons buried in more than 90 tanks covering 600 square miles. Underground these tanks sit in huge saucers designed to catch leaks, at least 11 of which have occurred before the installation was closed. This waste boils constantly due to its high radioactivity and must be vented to cool it. But the vapors produced are also radioactive and must be condensed and purified. What would be the fate or effect of such an installation

in the event of an accident, sabotage, or war? Hanford is our biggest concentration of waste and already contains more than enough poison to kill every living thing on earth. And the coup de grace: it's located in a fault region. Transferring the waste, however, would require a parade of tank cars, spaced every ten miles, five years to complete at a cost of approximately five hundred million dollars. The latest idea, not yet perfected, is to solidify these liquids and bury them below the water table in Kansas salt mines six hundred to one thousand feet deep. I can't yet argue the pros and cons of this idea but I would be interested in talking to Kansas residents about it.

Then there is the high probability of catastrophic results in the event of a storage facility or reactor accident. While these installations contain every imaginable safety system and several levels of independent backups, and the probability of an accident is extremely low, they are man-made machines and they are not perfect. Such an accident will eventually occur. In the late fifties, the Brookhaven report called it the "maximum credible accident" the complete loss of cooling fluid to the core and said it was nearly impossible. But, in the event of that near possibility, the report estimated 3,400 people would be killed, 45,000 injured, a 150,000 square mile area would be contaminated and the cost of such a near impossibility would approximate seven billion dollars. This report was based on a reactor many times less powerful than the current commercial models, but has never been updated.

Possibly the best argument against nuclear power production is the one least connected to their technology. In light of recent exposures concerning the Social Security program, the General Accounting Office, the Department of Agriculture's meat inspection program and the country's budget as a whole, Americans have simply lost confidence in the ability of their government to do anything right. To allow the use of nuclear power to continue would be expecting this government to deal critically with a multi-billion dollar business to insure our continued safety from radioactive perils, and would approach the border of the ridiculous. If we can't trust the government, what do we do? Allow the industry to regulate itself as healthcare and the food industry have done? This is the industry that told us a nuclear power plant could not explode. It was an impossibility. Yet, what was the overwhelming fear March 30th in Middletown, Pennsylvania?

So, considering all these arguments along with the possible thermal effects of a group of installations on the marine life in their immediate environment, the yet unsolved problems of decommissioning a reactor, and the consequential increased availability of fissionable materials to terrorists, we take events at Winsgale, England, Idaho Falls, Idaho, Richland, Washington, Browns Ferry, Alabama, unknown numbers and severities of events in the Soviet Union, and now Middletown, Pennsylvania as warnings. At its current stage of development, nuclear fission for commercial power production purposes is not safe nor worth the risk. Until sufficient evidence exists to show otherwise, find or develop another means to produce our power or risk abominable consequences to ourselves and to our descendants. I would like to live and raise my family in southern New Jersey without the spectre of several nearby nuclear power plants in addition to those in existence there already.

Look at your sons and daughters. Think of their sons and daughters when you consider this bill. Is this the legacy you want to leave them? Or will we buckle to federal government's claim to preemption and allow a nuclear Whitman Park in New Jersey? If this bill is defeated surely no one will blame you when a near impossibility occurs in New Jersey. But if you follow your conscience and

if you resist the nuclear industry long enough to pass Assembly Bill 3037, when an accident occurs somewhere else one of those grandchildren or one of mine just might say thank you.

ASSEMBLYMAN STEWART: Thank you Mark. Next, we have Robert Bowen of the U. S. Labor Party followed by Ann Baker of the National Organization of Women, followed by Eleanor Coleman and that's the last name I have. If anyone else has a name they want to submit, I would suggest you move up here quickly and give us your name.

R O B E R T B O W E N: Thank you for the opportunity to address your Committee. I'd like to take the first few moments to simply refer to an article in the Labor Party's newspaper that I have placed before you called, "Facts on Three Mile Island Nuclear Accident". I want to point out several aspects that you can look at in more detail after the day's events. (1) There were a series of failures inside the Three Mile Island plant identified as failures 1, 2, and 3. The probability of failure 1 occurring is one in a hundred. The probability of failure 2 occurring is one in ten thousand. The probability of failure 3 is one in one thousand. Put together, that adds up to a probability of one in a billion of a simple mechanical or electro-mechanical malfunction. In addition, each of these systems has a manual override backup system to them. Furthermore, it is noted, should pump have turned on - which has a little arrow identifying the sump pump in the bottom of the primary containment building in the diagram - that pump was turned on by somebody who drained the liquid out of the containment building without any consideration whether that liquid contained radioactive materials in it or not. Now, those facts of the matter at Three Mile Island have not generally been distributed to the public nor to the press. That's the most disturbing aspect of the entire sequence of events around the Harrisburg facility. There has been a very direct and, in our opinion, deliberate attempt to prevent a full-scale investigation that would have included these elements into the ongoing discussion of the last several weeks. There are only three agencies that could have been responsible for that coverup, one is the Nuclear Regulatory Commission, second is the Federal Emergency Management Agency, and the third is the Department of Energy run by Energy Secretary, James Schlesinger.

In light of the events at the Harrisburg plant and also in light of the mishandling of the overall policy of the United States, a number of people including the Chairman of the Board of Dow Chemical in Michigan have called for Energy Secretary Schlesinger's resignation. I'd also like to point out that a State Assemblyman in Pennsylvania has called for the formation of a commission to conduct an independent investigation of the facts in the matter at the Harrisburg plant including the cover-up - why and who carried it out and criminal indictments against individuals who might have been responsible for that. I think it is important for me to go through that briefly because of the questions raised by the Committee. One of them was: Would on-site waste storage at Three Mile Island have increased the effects of the accident? My answer to that is absolutely not, for two reasons. First of all because of what identified earlier by representatives of PSE&G that the waste storage facilities are located quite remote from the main reactor building and power plant complex itself and secondly, in the case of the Harrisburg example, never at any time, including the present, was there any danger to human life anywhere near or in the vicinity of Harrisburg. The press reports to the effect that many lives were in jeopardy, the allegations that a core meltdown could have occurred, are scientifically false.

That brings me to what I think is the most general point to be made with

respect to these hearings. You stated yourselves that there is a certain amount of knowledge that you lack in order to make informed judgments about nuclear power in general and in specific about the handling of the waste generated from the nuclear power stations. I would suggest that one of the things this Committee could do, at least in an initiating way for the whole State, would be to establish a series of educational programs for State legislators, not merely bringing people in to express their opinions, but to teach you how a nuclear power plant operates. How do you generate useable energy in the form of electricity, heat, etc. through the nuclear fission process - and in a more advanced stage of development through the nuclear fusion process which is one of the most exciting frontiers of human knowledge being worked on at Princeton University?

Specifically with respect to this bill, although I think I can empathize with the concern of the sponsor and supporters of the legislation that are concerned about the waste problem around nuclear power plants, their efforts are entirely misdirected. As has been pointed out by a number of experts, the technology for the disposal of nuclear waste exists. I will refer you to an article I believe was the June 1977 Scientific American in which the whole question of nuclear waste was fairly exhaustively gone through. The magnitude of the waste problem is miniscule relative to the popular misconceptions of that problem. What was identified in Scientific American was a specific proposal, which I don't necessarily agree with, but a specific proposal for geological isolation of the waste material that could not be reprocessed. Reprocessing represents one approach to the disposal of radioactive waste. A more effective solution to the problem which eliminates the necessity altogether for hiding waste underground or anything like that, is best represented by the work going on at Princeton. That is the nuclear fusion research going on at Plasma Physics Laboratories. The high energy neutron flux coming out of the fusion reaction could enable the radioactive materials in existing nuclear wastes and all potential nuclear wastes accumulated through the development of commercial nuclear power in the United States to be broken down into not merely safe handleable non-radioactive materials but enable it to be broken down into very valuable industrial chemicals, medical chemicals and so forth. Secondly, as an interim step toward that ideal state of things, the fusion-fission hybrid reactor, which has been stalled in development in the United States but is being pursued vigorously in the Soviet Union and Western Europe, would represent a way in which fissionable waste products could be transmuted in a reactor in the process of producing energy. That is both highly economical from the standpoint of fuel supplies for fission power plants, which has been the subject of some discussion in terms of the economics, and it is also a very effective way of dealing with the waste by-products from existing nuclear power facilities which are generally light water reactors.

One other question that has been brought up repeatedly is the legality of legislation prohibiting or in any way restricting the development of nuclear energy, and in specific, the constitutionality of the proposed legislation here. I can leave one copy of a U. S. Supreme Court ruling in *Ashelman versus Consumers' Power* in Midland, Michigan that the U. S. Labor Party was instrumental in as *amicus curiae* to the Supreme Court. What the Supreme Court ruled in that case was that it is solely up to the U. S. Congress to determine the criteria for the development of nuclear power everywhere from radiation safety levels during the operation of the plant to waste disposal and so forth. And the lower courts could not legislate through court rulings alternatives that a power company may have to investigate.

In other words, if PSE&G decided they wanted to build a nuclear power plant on Newbold Island out here on the Delaware River, the only criterion that is legal, according to the Supreme Court, is whether or not PSE&G in the construction of that plant meets the safety guidelines and other regulations of the Nuclear Regulatory Commission and other standards set by the U. S. Congress. From that standpoint any attempt by the states to regulate the development of nuclear power and in the specific instance represented by A-3037 here, you would simply be overruled by the courts if anyone took this bill into the courts to reverse it.

Lastly, you have asked for a series of suggestions of what to do. There have been memorials introduced and passed by several state Legislatures around the United States requesting the president of the United States and U. S. Congress to increase the funding of nuclear fusion research and all of the aspects of it - which would be of course applicability to waste disposal from existing fission plants. I would suggest that this Committee or some member or members of it draft a memorial for introduction to both the Assembly and the Senate along those lines.

Secondly, I would suggest, in fact I already did, that a series of educational seminars be sponsored by the Legislature or by this Committee bringing in experts, scientists, nuclear engineers, and so forth, not merely for the purpose of discussing a particular aspect of nuclear power but teaching about nuclear energy. Because, whether some people like it or not, the world is going to be run on the basis of nuclear technology sooner or later. Assuming there is not a war or similar obstruction to interfere with the further development of peaceful relations among nations, nuclear energy is being fully pursued by the Soviets, the Japanese, the Germans, the French, the British, and so forth. They will be operating as well as our neighbor in Mexico on the basis of the nuclear powered economy within a very short space of time.

As to alternative energy technologies, what would you do? In the short run - this points up the aspect I mentioned earlier about Schlesinger - the nation of Mexico has discovered recently massive supplies of oil and it was only through the interference of the Energy Department of the federal government, the National Security Council of the federal government, that a contract that had been signed by the Mexican State Oil Company and by American based oil companies in Texas that a pipeline from Mexican oil fields into the United States is not already under construction. It was alluded to by a previous speaker. She did not feel that the energy shortage as is being presented in the news media as the basis for higher prices and austerity in related things is real. I concur with that. The CIA report recently released demonstrates that contrary to Schlesinger's public statements that oil production last year was a million or two million barrels short of the previous year, that, in fact, it was a million or two million barrels in excess of the year previous production despite the fact that Iranian oil was not available on the world market.

I would emphasize that the real solution to this problem is not technical as has been made clear by the testimony here. The real solution is politics. You as individual legislators and members of the Committee hearing this legislation, should consider endorsement of the Chairman of the Board of Dow Chemical's request that Carter fire James Schlesinger. In addition, I would suggest that you contact the appropriate people in the Pennsylvania State Legislature and participate in the investigation of the Harrisburg events. Because, if our allegations are true, then the implications for the future of this nation are more than dramatic. I don't think that any responsible public official can avoid looking into those

charges especially since they are not just based on wild accusations. They are based on very well documented fact. Thank you

ASSEMBLYMAN STEWART: Thank you very much. Any questions?

ASSEMBLYWOMAN McCONNELL: Could I ask him a question? Do you agree that the utility companies have a capacity to continue to store for say 17 years of spent fuel?

MR. BOWEN: I'm not sure of the specifics. I think it is pretty easily confirmed or not. Simply take a look at the design specifications for the new racks that PSE&G has suggested down at the Salem I and II plants, whether, in fact, they can contain it. There is in my considered opinion, I'm not a nuclear physicist or engineer but I've been a promoter of nuclear power for a number of years and I've studied the subject to the point of being quite familiar with the way in which a plant operates and so forth, the storage on site of nuclear waste products from a fission plant represents absolutely no danger whatsoever. I think that from the overall standpoint of the energy needs of this nation if we are going to guarantee the constitutionally mandated access to prosperity through technological progress, that nuclear power must be developed and I am quite confident that the technologies for dealing with any of the so-called problems exist and that the stumbling block is not technical, it's not scientific, it's political. There are numerous companies both in the industry and outside the industry that are more than willing to invest massive sums of money in reprocessing facilities, storage facilities and so forth. But as long as the overall energy program and economic policy of the nation is oriented toward a zero growth austerity regime, they are not willing to make those investments because the profits down the line aren't going to be there. I would suggest that deals such as have been proposed by Mexico, long-term agreements for the sale of oil in exchange for agreements from the United States to provide them with the technology to get it out the ground, are the model for the way in which U. S. policy must be conducted. I would assert that as State Legislators you have to be concerned with that question because that question ultimately determines what you are going to be able to do as State Legislators.

ASSEMBLYWOMAN McCONNELL: Well, you seem to be very confident that the storage of spent fuel is perfectly safe. It could be stored on and on into infinity? Without any problem?

MR. BOWEN: It could be without any problem. I don't think that that is the most desirable ---

ASSEMBLYWOMAN McCONNELL: And you also agree that it can be reprocessed safely and that it is feasible?

MR. BOWEN: There is no question in my mind whatsoever.

ASSEMBLYWOMAN McCONNELL: I wonder does the federal government know about you? Because they haven't given us any answers or ---

MR. BOWEN: Let me comment on that briefly. There is an ongoing war politically in the U. S. administration these days. This is not a secret. James Schlesinger is trying to promote himself as a spokesman for pro-nuclear interests. He absolutely is not. Since his earliest days in any government agency going back to the AEC and so forth, James Schlesinger has deliberately and with all consideration sabotaged the growth and development of the nuclear industry of the United States. That is provable. It is provable in court and we hope, someday, that Schlesinger will sue us for statements like that.

ASSEMBLYWOMAN McCONNELL: I don't think that is the purpose of the Committee hearing today.

MR. BOWEN: No, it's not. But the question you ask is if I know

this, why doesn't the federal government know it? And, I'm telling you that they do. The information I have given you is not something I developed by reading black market textbooks in my basement, this is information largely presented to us in conversation with the people who run the Energy Research and Development Administration, several of who have been the victims of very, very vicious slander campaigns. Several have quit in protest. A couple have been fired because of their outspoken support for nuclear power. Not just saying that they support it, but they were fired because of their attempts to come before bodies like this and present the wealth of knowledge that they have accumulated during the course of their studies to you so you can make an informed judgment as opposed to one based simply on a few opinions thrown at you.

ASSEMBLYMAN STEWART: Thank you very much. Next is Ann Baker of the National Organization of Women followed by Eleanor Coleman and followed by Mike Koscinski and that will conclude our meeting today. Again, I would like to remind everyone to please stick to the issue of the storage of spent fuel, not the pro or con of the nuclear race.

A N N B A K E R: Members of the Committee, I appreciate this opportunity to address you regarding Assembly Bill 3037. I am Ann Baker, Legislative Agent for the National Organization for Women in New Jersey. I commend the sponsors of this legislation for initiating action to curb the nuclear power industry in our State. It is very much to their credit that they introduced this bill months in advance of the terror of last weekend over Three Mile Island. It is to be hoped that enactment of this legislation in New Jersey and similar measures in many other states will induce the federal government to step boldly into the morass surrounding the nuclear power industry and bring to a complete halt this menacing technology. I might say parenthetically and absolutely speculatively that while you seem to be concerned about the constitutionality of enacting this particular piece of legislation and you have heard legal arguments on both sides, there probably is some impact to be gained from many Legislatures enacting this kind of legislation on whether or not the federal government will take a really hard stand on this. We see this right now in terms of calling for a constitutional convention to balance the federal budget. The government is now moving.

At its annual State Conference on March 31-April 1, the members of NOW, New Jersey voted overwhelmingly to call for a withdrawal of all State and federal funding of these facilities in favor of non-nuclear energy systems - that includes fusion. This was done with the recognition that such governmental action would affect the continued operation of nuclear power plants. They are not deriving all their money from investments, there is a lot of government subsidy. This resolution was based on many concerns. As a feminist organization, we are concerned with the acute effects of radiation on pregnant women in particular. It is noteworthy that Governor Richard Thornburgh of Pennsylvania is still advising - he may have changed his advice since noon of today - all pregnant women and pre-schoolage children to remain away from the immediate vicinity of the Three Mile Island nuclear power plant.

We are not, however, merely concerned with the effects of radiation on these classes of persons. Exposure to radiation has caused sterility in both men and women and therefore deprives them of the right to make decisions about their future procreative function and childbearing. Furthermore, accidents at nuclear power facilities endanger all human life and all living beings on our planet - that should be enough concern. Moreover, radiation is a health hazard in many ways. A wide range of cancers result from exposure to radiation. Radiation has a cumulative effect so the discussion about low-level or background radiation really misses the

point when it focuses on episodic exposure - how much exposure occurred to citizens living in and around Three Mile Island as one episode. Because of the longevity of the radioactive elements these occurrences of exposure do not simply go through our bodies and then disappear, radioactive elements are able to persist in the body and do damage at a much later date. Scientists refer to the time in which it takes for one half of the radioactive atoms to break down as the half life of the element. In terms of nuclear waste disposal of high level radioactive materials, the problem becomes absolutely boggling. For example, one radioactive isotope resulting from the nuclear reaction is plutonium - that was your question this morning, the plutonium and hydrogen byproducts - the half life of plutonium is 24,000 years. According to the New Jersey Public Interest Research Group report on nuclear power, if we follow the rule of thumb that a toxic radioactive substance must be contained for twenty half lives, the most minute fraction of the ten million pounds of plutonium which will be produced by the year 2,000 through our nuclear power industry must not be allowed to escape for 500,000 years. When we consider the acute problems we presently face with the disposal of non-radioactive toxic wastes, the notion of submitting all those future generations to such a radioactive legacy is, indeed, criminal. Do we have the right to make a decision in favor of continued nuclear development which will threaten the lives of the next thousand generations? To choose such a dangerous course is all the more unjustified when we realize we are irreversibly committing future generations to take responsibility for these wastes so that we may enjoy immediate short-term gains which really represent our lifestyle of conspicuous consumption run completely amok.

Present schemes for the storage of nuclear waste reveal the desperation of the proponents of nuclear power. There have been suggestions that nuclear wastes be rocketed into outer space or buried in one of the polar ice caps where these boiling hot residues will melt their way through the thousands of feet of ice. And then what? These are not horror stories as was suggested somewhat mockingly by one of the other witnesses. One proposal explored by the Atomic Energy Commission was the storage of these radioactive materials in deep salt formations in Lyons, Kansas. This choice was made after 15 years of study and a year of evaluating the Lyons site. The choice was challenged by concerned citizens and the Kansas Geological Survey which discovered that the AEC had conveniently overlooked two critical problems. The one was that the site had been drilled through by an oil prospecting company and looked like swiss cheese. Even worse was that the site was only 1800 feet or one third of a mile away from an operating salt mine which used water to dissolve the salt to be mined. Placing nuclear wastes that close to solution mining would have been disastrous because it undoubtedly would have affected the storage area. A basic premise in storing nuclear wastes is to avoid the conditions which would cause the containers to become corroded and consequently to leak. The haste of the AEC to put its stamp of approval on this particular scheme, reveals the urgency experienced by the industry to allay the fears which people have about radioactive wastes.

Currently the wastes which operating reactors have produced are being stored at the reactor sites because there is no permanent disposal facility. Some nuclear power plants are even running out of temporary storage space. Although we have heard that Salem I is rearranging its racks, I'm curious as to the mechanical process of rearranging racks with nuclear radioactive rods already in them. But, that is a technological question that I have no knowledge of. This has provoked consideration of building retrievable surface storage facilities which would have

the capacity to store wastes above ground for 100 years. We are talking about a possible life of plutonium wastes of five hundred thousand years. Negative reaction to this proposal seems to indicate that the industry will reconsider this hazardous course of action.

A further consideration in terms of radioactive wastes and future contamination is what will happen to scores of nuclear facilities when they become inoperable after 30 or 40 years of use? After approximately 30 or 35 years in operation, each plant has become so thoroughly poisoned with very high levels of radiation that they must be considered a permanent hazard to the public health for centuries. This is what has already been discussed as the decommissioning. You can completely tear apart a plant and the concrete disposed of in some sort of supposedly safe way or it will be necessary to seal and guard these facilities for centuries to make certain that no person comes in contact with its lethal radioactivity.

The clincher to all of this is that the nuclear industry has evaded liability for nuclear disasters through the mechanism of the Price Anderson Act which sets the liability level for the industry. It is not a particularly high figure when measured against the extent of the damages - as we are even seeing with Three Mile Island - and the level of liability assumed by insurance carriers for the airlines. Right now the limit is five hundred and sixty million dollars and the pool of insurance companies which cover the industry is only responsible for 20% of that five hundred sixty million dollar figure. The U. S. Government will pay the remaining 80% with our tax dollars.

It should be clear that the most prudent and ethical decision about nuclear power would be to discontinue its use as soon as it is possible to shut down all present facilities. To sanction the continued deployment of this hazardous source of energy, is to ignore problems beyond the magnitude of anything which the human race has yet undertaken. It is unthinkable to proceed to generate thousands of tons of long-lived wastes, highly lethal radioactive wastes, before we have any notion of what we are going to do with them. We cannot solve the energy problem by creating a radiation problem.

I'd like to make one comment on a statement which was made by another witness. That is the assumption that if we don't go nuclear, we are quashing scientific and technological development. What we are quashing really is a concentration - a capital intensive concentration - of scientific and technological development. But we are hardly quashing this kind of technological development. This kind of technological development is going on in many other areas related to energy use. But, because the government has chosen to invest so much money in the development of nuclear power, there has not been the subsidy to work on alternative, non-nuclear sources of energy. I believe that we really need to put our dollars into that particular exploration. The assumption that we are going backwards if we turn our backs on nuclear energy, seems to me so fallacious when you look at the consequences of radioactivity that I can't imagine any person actually making that allegation. It is true this has been a scientific breakthrough but not all scientific breakthroughs are great. I think most of us feel very strongly about the effects of our nation having entered the nuclear arms race in the 1940's.

ASSEMBLYMAN STEWART: Thank you very much. Eleanor Coleman.

E L E A N O R C O L E M A N: I am somewhat limited this morning as to the things that I can discuss because my husband and I are currently involved in an intervention and we are also involved in a rate case dealing with these public utilities.

I would just like to say to those people who are suggesting you make

rational assessments that you also assess the human element of this whole thing. Please remember that no one has assured us, even if we are just talking about the spent fuel, that nothing can happen with that either. I cannot help but remember today here that there are pregnant women and small children who have been away from their homes for eleven days. I'm sorry it bothers me very much.

I also heard another gentleman here this morning refer to the California case. It bothered me that he did not know anything about -- He didn't seem to want to discuss our own CAFRA case. It brought a question to my mind. I wonder which department, agency, or whatever, is reviewing the occurrences that are reportable from these nuclear power plants here in New Jersey that are operating today? Can anyone of you tell me?

ASSEMBLYMAN STEWART: Are you talking about the environmental ---

MS. COLEMAN: I'm talking about these - and I particularly didn't bring Salem because we are involved in that case - this happens to be from Three Mile Island. It is also in our Public Document room. And, I'm sure somewhere in this State some agency is reviewing these, I hope.

ASSEMBLYMAN STEWART: The Department of Environmental Protection is, I don't know what that is, but I know they are ---

MS. COLEMAN: You are assuming that they are reviewing all of the occurrences that are going on?

ASSEMBLYMAN STEWART: I don't know that they are reviewing all of the occurrences that are going on. I know they are monitoring the entire situation. In fact, that was one of the things we talked about at the meeting at one o'clock, between one and two.

MS. COLEMAN: O.K. then I can rest assured that every one of these documents that reveals a reportable occurrence is being reviewed by the Department of Environmental Protection?

ASSEMBLYMAN STEWART: Without having seen it, I really don't know. But I do know they are reviewing. If you leave it with us, we'll find out.

MS. COLEMAN: I could supply it to you later on if you want to make a copy of it.

ASSEMBLYMAN STEWART: Just leave it with us and we'll find out what they are monitoring and what they are not.

MS. COLEMAN: O.K. Because even in the Document Room they tell some very interesting things that happened at Three Mile Island. For instance, a mere thing like 60,000 gallons of water was mistakenly discharged into the river. They are all there. I'm sure it is happening in our plant too.

ASSEMBLYMAN STEWART: Can you discuss with us the technology in changing from a fuel assembly that holds 24 racks as opposed to the one that changes to 54? Has there been any charge that that extension is unsafe? Has anyone ever said that it is unsafe and backed it up with any figures?

MS. COLEMAN: I think it is going to be difficult to prove one way or another without it actually happening. But, I'm one of those people who prefers to take it easy on what we are doing at this point especially in light of what has happened.

ASSEMBLYMAN STEWART: Is there anything else? I interrupted you.

MS. COLEMAN: No. I just wanted to make sure that there is somebody in the State reviewing these. I am very limited as I said before. I also understand that I might have another opportunity to speak at a hearing that might be scheduled later.

There is another thing that your Committee might consider for the future.

It is that we are really not dealing with specific utility companies in this State. They have all gone to areas outside of the State in that they own percentages of this plant or percentages of that plant. I hope that when we are dealing with these utility companies we are looking at the entire picture and we are looking at the regional. I think we should start to do some re-thinking about this.

I'm sure the Chairman has already seen this but maybe some of the other Committee members have not. We who live in Pennsville, where I live, are not only dealing with Salem and Hope Creek nuclear power plants but there is a possibility of a fifth which would be closer to us - right across the river.

ASSEMBLYMAN STEWART: O.K. Thank you very much, Mrs. Coleman. Our last participant will be Mike Kosciński.

M I K E K O S C I N S K I: My name is Mike Kosciński. I'm a solar activist and neighborhood organizer from Trenton.

A scientist mentioned here before that the Middle Ages was a time of pestilence, plague. It's a funny thing that the Middle Ages was a society that didn't know anything about biology or basic medical practices, like washing your hands before you eat or basic hygiene. One of the reasons why they had pestilence and disease and plagues and all the other problems they had was that they did not have a basic understanding of biology and didn't really know that the environment was a very, very delicate thing and that the human body was a very sensitive and delicate mechanism. So, it took some time and hundreds of years passed before they realized that doctors should wash their hands before they operate on a patient or a doctor should sterilize a needle. These weren't great technological breakthroughs. They were more just a basic understanding of the forces that are at work in nature. And so it is with nuclear power. It may take several hundred years before we realize that low level radiation that is emitted from nuclear plants and also from the waste products have a very negative effect on our environment - just as in the Middle Ages they didn't know that you shouldn't drink milk from a cow that had tuberculosis. All of these diseases had an environmental or genetic base. The same it is again with nuclear power. The low level radiation - it's common sense - will have some effect environmentally, cause a cancer, or it will have some genetic effect. That's what it all comes down to - whether we are going to be like the people in the Middle Ages and say we don't know anything about biology and we are going to continue to go against the forces of nature and not realize that the human body and our very delicate environment cannot be played with.

I think the bill will have to come to some understanding. Maybe it might be important to get some people from the Rutgers Medical School to testify about the effects of low level radiation and the genetic material and the DNA, also the relation of low level radiation to the carcinogenetic effect.

One more thing, in terms of coal, because people have a knee-jerk reaction in terms of coal mining they say, "If nuclear power were stopped then we would have 300 miners killed every year and there would be the destruction in Appalachia and the far-western states". That I don't think really addresses the issue because what has to be addressed is that things don't have to happen that way. Miners don't have to be killed. In Europe, for example, a whole different technology of coal production is used so that maybe five miners are killed instead of three hundred. The fact that we kill three hundred every year and destroy our environment is simply because the Peabody Coal Corporation elects to and continues to because the federal government and the state Legislature allows it to do that. It doesn't necessarily have to be the way though. I get very upset when I hear we are going to kill three hundred

coal miners. Peabody Coal doesn't have to kill three hundred coal miners. So the environmental risks can be negated if we elect to do so and so it is with nuclear power. That is the substance of my talk. Thank you.

ASSEMBLYMAN STEWART: Thank you very much. Any questions? That is the end of our public hearing today. For the benefit of those of you who are interested, the record will remain open until the twentieth of April for anyone who wants to submit further testimony. You may submit some written documents, if you like, prior to that date. Thank you very much for coming.

On January 10, 1979, the Seventh Circuit Court of Appeals followed and reiterated the decision in National Resources Defense Council v. Nuclear Regulatory Commission, 582 F.2d 166 (2d Cir. 1978) on the point that the "...the [Nuclear Regulatory] Commission is required neither to conduct a rulemaking proceeding requested by a petitioner nor to determine that high-level radioactive wastes can be permanently disposed of safely prior to issuing nuclear power reactor operating licenses." State of Illinois v. Nuclear Regulatory Commission, F.2d (7th Cir. 1979), Docket No. 78-1171.

Almost on point is the March 6, 1979 decision of Pacific Legal Foundation v. State Energy Resources Conservation & Development Commission, F. Supp. (S.D.Ca. 1979) Civil No. 78-711-E. In this matter the court had before it the validity of a California statute that prohibited the siting of any nuclear power plant absent an approved reprocessing technology or waste storage availability. The proponents of the legislation attempted to circumvent the doctrine of federal preemption on the economic theory of trying to prevent the state from assuming the financial risk should there be no means of disposing of nuclear wastes.

The court was not persuaded and held:

"That California may have predicated Public Resources Code section 25524.2 upon an economic purpose is not a sufficient condition for a finding of constitutionality. Instead of focusing narrowly on the issue of California's legislative purpose, the court will examine whether section 25524.2 impinges upon the sphere of exclusive regulatory jurisdiction reserved to the NRC in section 2021.

"Section 2021(c) provides that the NRC shall retain authority and responsibility with respect to the regulation of the construction and operation of nuclear power plants and with respect to the regulation of nuclear waste disposal. In the exercise of its discretion, the NRC has decided not to require the existence of a technology for permanently disposing of nuclear waste as a condition precedent for the construction and operation of nuclear reactors. The NRC's decision in this regard falls within the preempted sphere because it relates to, touches upon and involves the regulation of radiation hazard pertaining to the construction and operation of nuclear power plants and to nuclear waste disposal. California has decided otherwise, decreeing that no nuclear power plant may be constructed in the State of California unless there exists a demonstrated technology the disposal of nuclear waste. The court finds that the question of whether nuclear power plants may be constructed and operated in the absence of a demonstrated technology for the permanent disposal of nuclear waste is exclusively reserved to the NRC by section 2021(c) and that state regulation on this subject is displaced. Accordingly, the court holds California Public Resources Code section 25524.2 impliedly preempted....

"Assuming arguendo that Congress has not completely foreclosed state regulation on the subject of radiation hazard control, California Public Resources Code section 25524.2 is nonetheless void because it "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress," Hines v. Davidowitz, 312 U.S. 52, 67, 61 S. Ct. 399, 404 (1941), in encouraging and fostering the development, use and control of atomic energy."

The court went on to state:

"...Although the Atomic Energy Act certainly leaves room for the states to regulate on the subject of nuclear energy within the confines of section 2021(k) and 2021(b), the power to regulate is not necessarily the power to prohibit. There seems little point in enacting an Atomic Energy Act and establishing a federal agency to promulgate extensive and pervasive regulations on the subject of construction and operation of nuclear reactors and the disposal of nuclear waste if it is within the prerogative of the states to outlaw the use of atomic energy within their borders."

found: On the question of policy, the court succinctly

"...However, it is the province and duty of this court "to say what the law is," Marbury v. Madison, 1 Cranch 137 (1803), rather than to pass on the public policy question of whether the states ought to utilize or not to utilize atomic energy or whether the federal government ought to grant autonomy to the states on the nuclear question...."

In conclusion, the opinion stated:

"Applying the foregoing principles of law, the court finds California Public Resources Code section 25524.2 preempted both because Congress has impliedly foreclosed state legislation on the subject of nuclear waste disposal and, alternatively, because the statute stands as an obstacle to the purposes and objectives of Congress as stated in the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 et seq.".



Sierra Club

WEST JERSEY GROUP

Camden, Burlington, Salem, Cumberland, Gloucester,
Atlantic & Cape May Counties

"...TO EXPLORE, ENJOY AND PRESERVE THE NATION'S
FORESTS, WATERS, WILDLIFE AND WILDERNESS..."

April 9, 1979

Subject: Assembly Bill No. 3037 before the Committee on Transportation
and Communications on January 16, 1979, then February 13, 1979
to Agriculture & Environment Committee.

Although this bill is stated as "an Act concerning the establishment of
of utility rates and amending R.S. 48:2-21" the statement of purpose says
"this bill is to prevent more nuclear powerplants from becoming operable in
New Jersey before the question of the disposal of spent fuel rods and
permanent nuclear waste is settled." To us this is the very important
issue to be discussed; whether this attempt to deal with the problem is
sufficient.

In section 2 (e) the bill reads: "The board (we assume it means Public Utility
Commission) shall not permit any utility within its jurisdiction to in-
corporate costs incurred in the maintenance and operation of any nuclear
fission thermal powerplant which requires the reprocessing of fuel rods
and which has not been in operation at any time previous to the effective
date of this act, into its rate base until both of the following conditions
are met:" then follows the concern about how fuel rod reprocessing plants
and permanent, radioactive waste sites and storage are to be ^{actually} in operation

~~_____~~

Needed in this language is inclusion of the costs of construction of these
tremendously expensive nuclear plants. Billions of dollars have been spent
on many aspects of developing nuclear power plants for a source of energy.
The citizens of New Jersey and throughout the country have been and will
continue to bear the brunt of this operation. Not only in the area of the
physical site but probable medical expenses into the future from these
radiation hazards known already to have taken place and for those of tomorrow.
With the catastrophy of the Three Mile Island nuclear reactor mis-adventure
fresh in our minds, addressing this particular legislation today seems in-
adequate, although it is laudatory as a beginning of the dialogue that should

more

3X

April 9, 1979

be taking place in New Jersey considering the investment we already have in nuclear power plants. As a matter of fact, there has been a great deal of debate since the first planning and construction of these nuclear reactors but it has been among those most sophisticated in the field and above the understanding of the general public. Today there is a different level of discussion abroad and the legislators as well as citizens should be studying the proposition of whether we should continue to operate them at all. This Sunday's newspapers, the Philadelphia Inquirer and The Bulletin contain very excellent accounts of what happened in Pennsylvania beginning March 28 at the Three Mile Island plant and continues this very minute in concern of coping with ^{an} almost impossible control of events.

Board of Directors,
The Sierra Club's/in 1974, voted to oppose new nuclear power plants. Its basic nuclear policy is this: "The Sierra Club opposes the licensing, construction and operation of new nuclear ^ureactors pending...resolution of the significant safety problems inherent in reactor operations, disposal of spent fuel, and possible diversion of nuclear material capable of use in weapons manufacture..." We believed that answers should be found to the serious problems which exist before we are irreversibly committed to, and dependent upon, nuclear power.

This legislation obviously does not go far enough for the members of the Sierra Club and indeed we have been reason itself in stating that this policy has two sides. If the answers to these nuclear problems can soon be found the industry has nothing to worry about. We do not want to gamble with people's lives, with the well-being of future generations and with prodigious sums of capital that may affect the viability of our economy.

As it stands today, we support the phasing out of existing New Jersey nuclear power plants as soon as practical. I recall a personal exchange I had with the President of the Public Service Electric & Gas Company, Mr. Smith, on a Meeting House television program about two years ago. I asked him what if the utilities put "all of their energy eggs into the nuclear basket and some terrific accident should occur and the public demand an end to the operation of the nuclear plant. What would they do to provide energy and how to expand in the large financial investment they had required us to make?" There was no

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answer, just an enigmatic smile. Neither the moderator of the program nor I could get an explanation of their responsibilities in this regard.

Although this statement wanders from the letter of the presently addressed legislation, the subject of our dependence upon nuclear power energy in New Jersey cannot be narrowed down to a matter of adjustment of rates.

A full discussion and debate about reprocessing of fuel rods and any "permanent" radioactive waste sites and storage of same open up a Pandora's Box of concerns. I am attaching a copy of a statement by Dr. Marvin Resnikoff, Chairman of Sierra Club's Nuclear Subcommittee of the Energy Policy Committee. This statement is on the History and Status of Reprocessing, March 7, 1977. These technical and deadly important matters must be dealt with by those having responsibility for licensing and regulating nuclear reactors, indeed all possibly dangerous material going forth to the public.

The Sierra Club has recently hired a Nuclear Waste Coordinator, Drew Diehl, in the Washington, D.C. office to assist in developing a national campaign on the nuclear waste question. Our organization, of about 182,000 members, does not spend its money on anything but the most crucial issues. We are dependent upon membership and donations and suffering the inflation woes of everyone today. The New Jersey Chapter urges all environmentalists, and I include decision-makers such as you in the legislature, to oppose any effort to deploy additional nuclear reactors. A full and open dialogue on alternative energy futures must be encouraged.

The three important issues to be settled regarding this form of energy source are: (1) managing and disposing of radio-active waste material- some of which can remain dangerous for hundreds of thousands of years; (2) the safety of nuclear reactors; and (3) the possibility of nuclear materials being stolen for use in acts of terrorism. Incidentally, present nuclear reactors are less efficient than fossil fuel-fired electric power plants since they release more heat to the local environment.

I could say much more on this subject, obviously. It is a complex matter and, as was demonstrated in Pennsylvania's recent accident, much more dependent on the perfectibility of man and machine than is ever to be practicable. This legislation could be strengthened and be the beginning of a new era of

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April 9, 1979

enlightenment about energy sources in New Jersey. We desperately hope that this bill will be the harbinger of better dialogue between those who legislate and those who are the legislated. The industry has an obligation to openly answer the many questions that must have come to your minds while deciding such momentous matters as nuclear power plants. The federal government also has a large responsibility to you who govern the state; you can surely call upon those agencies for more assurances than have been presented so far. We ^{upon} wish/you who are considering this legislation much wisdom and pray that you will be moved to look more thoroughly into this issue which affects everyone today and into the future.

Thank you very much for giving us this opportunity to tell you how we regard this proposed legislation and what we ask of you from now on. A revaluation of our use in this state of nuclear reactors as a principal or measurable source of energy is essential. Other areas/^{where} these plants and attendant paraphernalia are to cause deep concern are yet to be addressed.

I refer to the harm that may come to our Pine Barrens through the planned Forked River plant and its transmission lines. That, no doubt, will be debated in the near future and we expect you and your fellow legislators will be "boning-up" on that shortly.

Any assistance that the Sierra Club can give to you is now offered. There are many experts in our organization more than willing to cooperate with information you might need that they have. Please contact us whenever you wish and we will give you the benefit of their research and experience.

Carol Barrett

Carol Barrett, Conservation Chairman
West Jersey Group/New Jersey Chapter Sierra Club.
Member N.J. Chapter Executive Committee
1305 Walnut Avenue
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STATEMENT BEFORE THE CALIFORNIA
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
by

MARVIN RESNIKOFF
NEW YORK PUBLIC INTEREST RESEARCH GROUP
and the SIERRA CLUB

on the
HISTORY AND STATUS OF REPROCESSING
March 7, 1977

Thank you for the opportunity to appear here today. As Chairperson of the Sierra Club Nuclear Subcommittee of the Energy Policy Committee, and as Staff Scientist for the New York Public Interest Research Group, I have been concerned with the issues of plutonium recycle and reprocessing for the past three years now. The Sierra Club is an intervenor in the NRC construction permit and licensing proceedings concerning Nuclear Fuel Services. The Club has overseen the operations of NFS since 1970, and we have been involved more intensively since April, 1974.

The Sierra Club is also a full party to the plutonium recycle, or GESMO, proceedings before the Nuclear Regulatory Commission. As part of our direct testimony in that proceeding, I have prepared a rather lengthy, 172 page report on NFS and Barnwell which addresses many of the questions posed by the Energy Commission on the history and status of reprocessing. This was completed March 4, and I have a copy for your use that I have brought along. I will extract from that testimony answers to specific questions, but much of the specific substantiation is contained in the Sierra Club testimony.

The bill AB2820 requires the Commission to find that "there exists a technology for the construction and operation of nuclear fuel rod reprocessing plants". I don't believe it is a simple matter to define what is meant by, "there exists a technology". Does it mean a set of gizmos and widgets on paper, or does it mean a demonstrated technology, one that actually works on a large scale? When we say demonstrated technology, then the question is - how much occupational exposure, radioactive effluents and plutonium loss, at what capacity factor, is acceptable in demonstrating a technology? What if the technology exists on paper, but requires humans to operate flawlessly? What if additional containment technology makes the process uneconomic today or in the near future? One should also keep in mind that management commitment to health and safety is an important consideration. If management begins to over-ride safety margins for the sake of maximizing production, then occupational exposures and radioactive effluents may increase? Finally, whether the industry works is dependent on the regulation by the NRC. To summarize, when one says, "there exists a technology", one is talking about performance. I would interpret this to mean a demonstrated technology, with low occupational exposures, minimal radiation releases to the environment, minimal plutonium loss, commercially viable, with some tolerance to human error, with management commitment to health and safety, and a regulatory commitment to the public interest.

On this basis, the history of reprocessing on a commercial basis at NFS has not successfully demonstrated a commercial reprocessing industry. In fact, I believe that the industry operates at the limits of our technological and human abilities. I do not foresee a significant improvement at Barnwell.

Almost every section of the NFS plant has broken down, as the Sierra Club testimony demonstrates. Since several witnesses have extolled the virtues of the shear at NFS, I would like to detail the operating history of that component to make the point. The shear failed less than a month after initial operation. A pin had worked loose causing the clamp mechanism to jam. Repair was performed by contact maintenance in the Process Mechanical Cell crane room. The radiation levels on the shear were 300 mr/hr. One month later the hydraulic system on the shear began to hesitate; the time from instruction to cutting action was ten seconds. The fuel element clamping mechanism on the shear failed June, 1966. The radiation levels on the shear had now risen to three rads/hour, though only low burn-up fuel had been processed.

The saw blade and shear blade were broken about September, 1966. The replacement was held up because the electrical impact wrench did not work properly; it had fallen from the power manipulator bridge and broken. This comedy of errors, which accounted for large radiation exposures to personnel, was continued when the crane room shielding door was accidentally lowered onto the crane bridge, damaging the crane bridge wheels and track. In December, 1966, the spray shield on the saw was removed, and the radioactive saw coolant was allowed to fall to the floor. The floor drain was converted to a sump, and the water was returned to the saw coolant system. This increased the background radiation of the PMC room.

April, 1967: the lack of splash guards on the PMC saw caused leakage to the process cell below. By April, 1970, the radiation levels in the PMC crane room had reached 15 to 35 R/h.

In the third NFS Quarterly Report, to February 19, 1967, NFS reported the fuel jamming in the shear (3 days shutdown); pushout ram malfunctioning (Dec. 29, 1966); failure of the automatic shear lubrication system; failure of tilt fixture lockpin, locking the tilt fixture in the horizontal position (Dec. 24, 1966); freezing of the cross-cut spindle saw (Jan. 3, 1967) (11 day shutdown); and saw vertical travel mode failure on Jan. 15, 1967. These breakdowns, within a three week period, are indicative of the many problems with the shear at NFS. Further repairs, for these and other problems associated with the shear, were performed on May 16, 1967, June 26-July 1, 1967, August 23, 1967, October 24-November 3, 1967, February 9 - 19, 1968, February 5 - 12, 1969, August 8 - 10, 1969, November 24 - December 11, 1969, March 9 - 24, 1970, June 18 - 22, 1970, and March 14 - 16, 1971. I frankly fail to see how industry can state that the shear operated "successfully" at NFS.

Let me go on now to address some of the questions posed by the Commission, as they concern NFS.

capacity factor

NFS had a nominal capacity of 1 MTU per day, or 300 MTU per year. On several days, such as with Dresden fuel, it processed more than 2 MTU per day. However, over its six year history, it processed about 624 MTU or 35% capacity factor. The amount of fuel available was not the limiting factor because even when there was a considerable backlog, many problems limited production such as the dissolver capacity, low level waste evaporator malfunction, crane breakdown.

The average burnup of the fuel processed at NFS was 6,250 MWD per MTU. At Barnwell, the amount of fuel processed will be 15 times that amount, at 5 times the burn-up, or a projected radioactivity throughput 75 times greater than NFS.

Plutonium loss

NFS processed about 2,000 kg of plutonium. The measured loss was about 56.8 kg, or about 2.84%. The total plutonium loss, i.e., the difference between input plutonium, as measured in the accountability tank, and outgoing plutonium product, was 78.4 kg or 3.9%. This is contrary to the loss projected in many government reports of 0.5%, 1.0% or even 1.7%, as recently quoted in the final GESMO. The plutonium unaccounted for is about 1% of input plutonium. What has happened to this plutonium? According to one NRC report, NUREG-0043, about 30 kg of plutonium is in the sludge in the high level waste tank. It appears only millicurie amounts have been released to the environment. Probably the remainder was passed with the uranium product, or may be due to measurement error. These numbers appear in Section 11.D of the Sierra Club testimony.

radioactive effluents

According to the PSAR of Nuclear Fuel Services, the radioactive concentrations in Cattaraugus Creek were expected to be about 10^{-10} Ci per ml, gross beta - but, in fact, the levels reached 3,530 times that amount - and this is with a plant operating at 1/3 capacity, with fuel 1/4 design basis burnup. These numbers appear in Section 11.B of the Sierra Club testimony. As Figure 11.B.2 shows, radioactive concentrations reached 44% MPC in the 3rd quarter 1970. The primary liquid radioactive constituents were Sr-90, Ru-106, tritium and Cs-137.

For the year 1971, I have calculated the decontamination factors for the various radionuclides, in Table 11.B.4 of the Sierra Club testimony. The decontamination factor is the ratio of radioactivity released to the environment over the input radioactivity. The figures show that about 1 part out of 50,000 of Ru-106, Sr-90 and about 1 part out of 250,000 of Cs-137, were released as liquids. One third of input iodine-129 was released as a liquid, at least $\frac{1}{3}$ as a gas, and the remainder went to the high level waste tank, where it was probably boiled off and released. Therefore, almost all the iodine-129 was released. So far as Ru, Cs and Sr are concerned, I see little improvement at Barnwell. Yet the NRC Staff believes that the Barnwell facility can capture 1 part per billion of these radionuclides, and 1 part per 40 of iodine-129. I think their confidence is misplaced.

All the tritium, krypton-85 and carbon-14 were released from NFS. The NRC Staff have indicated that it is not cost-justifiable to recover these radionuclides. However, I believe that Barnwell will have to install additional containment equipment to capture kr-85 and iodine-129 in order to satisfy the new EPA regulations.

occupational exposure

The NFS record on occupational exposures is scandalous. The PSAR stated that an operator would receive no more than 0.2 rem per quarter, leaving about 1 rem per quarter for maintenance. There was no discussion of maintenance and transient workers. However, contrary to the projections, the average exposure for full-time employees increased from 2.74 rems per year in 1968 to 7.24 rems per year in 1971, averaged over all employees, including management and secretaries. This is shown in Section II.C of the Sierra Club testimony. This figure does not tell the whole story because of the NFS practice of employing transient workers. By 1971, these transient workers were absorbing half the dose at the plant. In that last full year of operation, NFS employed 162 full-time employees and 991 part-time employees. Some of these transient employees were as young as 18 years old, worked for minutes, and received a quarterly dose. Had NFS not employed transient workers, the dose to full-time employees would have been over 14 rems per employee. It is also interesting to consider the total dose to all employees at NFS as a function of time. In 1968, the total whole body occupational exposure was 851 person-rems, increasing to 1531 in 1970 and 2366 in 1971, before the plant closed down. Recall that these figures were for a plant operating at 1/3 capacity, with fuel at $\frac{1}{4}$ design basis burn-up. To compare this radiation dose with that received by government employees at Savannah River and Hanford, the maintenance employees at the government facilities received 0.5 rems compared to 7.3 rems at NFS; the laboratory employees received 1.1 rems at government facilities compared to 5.8 rems at NFS; and the process employees received 0.26 rems at government facilities compared to 8.92 rems at NFS.

The long term whole body limit for occupational exposure is 5 rems, with 12 rems allowed in any one year if one's body bank allowed it. NFS operators were getting a dose close to 9 rems. NFS was clearly burning out its operators.

Many changes were made to the plant during its 6 year operating history, but none checked the rising trend of occupational exposure. Radioactivity, which was supposed to remain within the process equipment, behind massive shielded walls, began to enter normal access areas; hot areas of the plant, where workers were supposed to enter infrequently, because of remote maintenance, required contact maintenance. As Inspector Browne said about NFS, "we were aware of the fact that radiation exposure was getting to be too much of a way of life for them." At that point, at the end of 1971, before the plant closed down, the AEC Inspection Staff sat down with the NFS management to discuss the exposure record. The numerous correspondence on occupational exposures is laid out in Section III.B of the Sierra Club testimony.

In addition to the loss of control of radioactivity, expressed in terms of whole body doses, 40 workers were exposed to excessing air con-

centrations of radioactive materials in 15 separate incidents. From 1966 through 1972, the number of incidents occurring in each respective year was 1,4,0,4,0,4,2. As the AEC Inspection Report states it:

"The above information...shows no improvement in exposure controls or radiological safety conditions over the operating history of the plant."

These events were caused many times by failure of NFS employees to heed instructions, according to NFS management. But why would this happen? Either management, for some reason, did not instill the proper respect for radiation among employees, or perhaps, inordinate discipline is required of workers in the reprocessing industry.

Time does not permit me to discuss the recent donations of NFS to the State of New York of high level waste tanks, low level solid waste burial site, which is leaking, high level solid waste burial site, and reprocessing building. The cost to decommission these facilities, assuming that the technology was known, is upwards of \$500 million. NFS has not been a good business proposition for New York State.

To conclude, there has not been an orderly development of the reprocessing industry in this country. The technology has not been successfully demonstrated at NFS - the occupational exposures, plutonium loss and radioactive effluents, have been far greater than the original projections. Yet economic considerations have forced AGNS to move towards a large facility, with associated economies of scale. Thus, even though the technology has not been demonstrated, the industry is moving towards a facility with 75 times greater radioactivity throughput than the NFS facility. I therefore do not foresee a significant improvement at the Barnwell facility.

Thank you.

STATEMENT OF JERSEY CENTRAL POWER & LIGHT GIVEN
TO ASSEMBLY AGRICULTURE & ENVIRONMENTAL COMMITTEE
HEARING APRIL 9, 1979 PERTAINING TO ASSEMBLY BILL 3037

Assembly Bill No. 3037 prohibits the inclusion of costs incurred in the maintenance and operation of a nuclear fission thermal power plant within the utility's rate base at least until such time as the Federal government or its agencies have approved a technology for the construction and operation of nuclear Fuel Rod Reprocessing plants and other facilities for the storage and processing of radioactive wastes. This proposed legislation, as set forth in the statement attached to the Bill seeks to prohibit the future completion or future construction of nuclear power generators within this state as of the effective date of the law. Jersey Central Power & Light Company opposes this legislation because we believe it conflicts with federal regulatory powers.

The aims and purposes of this bill are contrary to the purposes and regulatory powers of the Nuclear Regulatory Commission, successor to the Atomic Energy Commission. The Federal Atomic Energy Act, 42 USCA §2011 et seq, governs the development, use, and control of atomic energy. The United States Supreme Court in the case of Northern States Power Company vs. Minnesota, 447 F. 2d, 1143 (8th Cir. 1971), aff'd mem. 405 U.S. 1035 (1972) has held that the federal government, under the Atomic Energy Act, has exclusively preempted the field of atomic energy regulation pertaining to radiation hazards. Moreover, the New Jersey Supreme Court has adopted this same position

in the case of State vs. Jersey Central Power & Light Company, 69 N.J. 102 (1976). In that case, the New Jersey Department of Environmental Protection had brought an action against Jersey Central seeking penalties for a fish kill allegedly resulting from the discharge of waste water into tidal waters. The Court determined that:

"A state may not interfere, directly or indirectly, with a preempted matter, even though the state's proscription may not have been directed at the particular activity involved."
(Emphasis added)

Directly on point is the very recent decision of the United States District Court for the Southern District of California in the case of Pacific Legal Foundation vs. State Energy Commission. The Court struck down a California statute which prohibited the construction of new nuclear power plants unless the appropriate federal agency had approved a technology for disposal of high-level nuclear wastes. The Court determined that such a statutory provision was void since by implication the federal government's regulatory scheme had preempted this field of regulation and since the California statute so conflicts with federal law that it was an obstacle to the purposes and objectives of Congress.

Assembly Bill No. 3037 attempts to prevent the future construction of nuclear fission power plants within the State of New Jersey by blocking a utility from making a rate application which would reflect the costs of operating or maintaining such a facility. Thus, not only would the company be precluded from earning a reasonable rate of return on its investments, the actual costs of operation and maintenance, could not be included in the utility rate charges to its consumers. Such action, would effectively discourage utility

companies from completing the construction of nuclear power plant facilities and would economically destroy the capability of any utility company to contemplate the commencement of plans to construct additional nuclear facilities.

The economic basis for nuclear power plants now being constructed, but which would not be operational by the effective date of this legislation, would be effectively destroyed by this legislation. The proposed law would constitute a "taking" of these facilities by the state contrary to the United States Constitution since upon completion of construction and commencement of operations, the utility company would be foreclosed from recovering the cost of operation and maintenance. The Forked River plant of Jersey Central Power & Light Company, now being constructed, could be subject to this legislation with disastrous results to the company.

Furthermore, the proposed amendment to N.J.S.A. 48:2-21 would make any technology for the disposal of radioactive wastes developed or approved by the federal government subject to the review of the New Jersey Board of Public Utilities and New Jersey State legislature. Again, these procedures to subject federal regulatory determinations to the BPU and state legislature approval, constitute a violation of the federal preemption doctrine. The proposed legislation undermines the legislative processes of the United States legislature. Already included within the Atomic Energy Act are provisions authorizing state control over nuclear by-products but only by specific agreement with the NRC and then, only where the state has a program for radiation hazards adequate to protect the public health and safety, and where that program is compatible with the Nuclear Regulatory Commission's program for the regulation of such materials.

Since a utility's ability to function depends upon a fair rate of return based upon an adequate rate base, control over the types of costs included within its rate base, can dictate the type of endeavors and activities conducted by a utility company. Analogous to a legislature's power over the purse strings, this legislation seeks to prevent utilities within the State of New Jersey from constructing nuclear fission power plants for the purpose of generating sufficient and economical electrical energy for its users. Such a legislative approach violates the federal government's pre-emption of the power to regulate the construction of nuclear power plants, as much as a law which states that utilities in New Jersey shall not construct nuclear facilities.

Finally, the New Jersey Board of Public Utilities under Docket No. 762-194 has instituted a generic proceeding addressing the engineering, economic and regulatory issues leading to the decision to build a particular mix of generation facilities to meet system requirements and provide the most economical electric power to the residents of New Jersey. This legislation deprives utilities from using the full spectrum of power sources necessary to supply the ever increasing demands for efficient and economical electrical power within this state.

STATEMENT ON ASSEMBLY BILL 3037

BY

ERNEST D. HUGGARD,
VICE PRESIDENT - CONTROL

ON BEHALF OF

ATLANTIC CITY ELECTRIC COMPANY

Atlantic City Electric Company appreciates this opportunity to present its views on Assembly Bill 3037, introduced on January 16, 1979.

Assembly Bill 3037, according to its statement of purpose will "prevent more nuclear power plants from becoming operable in New Jersey before the question of the disposal of spent fuel rods and permanent nuclear waste is settled." This purpose is to be accomplished by preventing the recovery in electric rates of operating and maintenance costs due to the production of electricity by new nuclear generating stations which go into service after the effective date of this bill.

Assembly Bill 3037 will adversely impact the financial viability of Atlantic Electric and could jeopardize the Company's ability to provide reliable electric service. In addition, I am informed by a preliminary opinion of counsel, that this bill anticipates an unconstitutional confiscation of private property; thus, offending both the United States and New Jersey State Constitutions and, furthermore, runs afoul of the supremacy clause of the United States Constitution since Congress has preempted direct and indirect state regulation of nuclear power plants.

By way of background, it should be noted that Atlantic Electric owns 7.43% of Salem Unit No. 2 which is the next nuclear unit scheduled to go

into commercial operation in New Jersey. The Company's present Levelized Energy Adjustment Clause, which was placed into effect in January of this year and which is intended to remain in effect at a constant level throughout all of 1979, was developed under the assumption that Salem Unit No. 2, with its significantly lower energy costs, would be placed into service in August. Thus, Atlantic Electric's customers are already experiencing lower electric rates due to the expected operation of Salem Unit No. 2 in 1979. However, the Company has not yet been permitted by the Board of Public Utilities to include its investment in Salem Unit No. 2 in rate base, although a rate proceeding is now under way in which the Company has requested rate relief to cover both the capital and operating costs of this additional generating capacity. It should be also noted that the customer impact of the additional rate relief associated with Salem Unit No. 2 will be reduced since a portion of the additional costs will be paid by new customers, particularly the casino industry, who are presently locating in the Company's service area.

Assembly Bill 3037 would not only result in a substantial and adverse financial impact on the Company, but could jeopardize Atlantic Electric's service reliability. The demand for electricity in Southern New Jersey is predicted to grow at a rate of about 5% per year over the next few years with the expansion of the casino industry and the continued construction of 10,000 new homes each year.

Our short-term plans call for meeting that demand with Salem Unit No. 2 which is due for commercial operation this year. In the longer term, we are counting on three other New Jersey based nuclear units to meet our

customers' demands. If, as a result of this legislation, we are denied the use of these units, we must then seek other more expensive energy sources or resort to some forms of mandatory load management measures that may not achieve public acceptance.

Based on a preliminary opinion of the Company's counsel, Assembly bill 3037 would attempt to effect an unconstitutional confiscation of the Company's property which has been dedicated to the public service and therefore violates both Federal and state constitutional guarantees and directly conflicts with the laws of New Jersey which require that utility rates be just and reasonable. The very statute that Assembly Bill 3037 seeks to amend commands the Board of Public Utilities to fix just and reasonable rates, whenever the Board shall determine any existing rate or charge "to be unjust, unreasonable, insufficient or unjustly discriminatory or preferential." Electric rates which fail to allow the Company to recoup the direct operating and maintenance costs of utility facilities that are used, useful and dedicated to public service is tantamount to an unconstitutional confiscation of property.

I am informed by counsel that eighty years ago, the United States Supreme Court in Smyth v. Ames, 169 U.S. 466 (1898), stated that the Fifth Amendment of the United States Constitution prohibits the setting of rates so low as to require a company to operate at a loss. "The corporation may not be required to use its property for the benefit of the public without receiving just compensation for the services rendered by it." Id. at 546. This principle was confirmed in 1944, again by the United States Supreme

Court in FPC v. Hope Natural Gas Company, 320 U.S. 591 (1944), which held that rates cannot be set at a level where a company will not be able to recover its costs. Yet, this is precisely what Assembly Bill 3037 would do. These cases represent the foundation for the development of all subsequent rate law.

More recently, the Federal Circuit Court in Washington, D. C., stated that, "It is, of course, well settled that a governmentally fixed rate confining a public utility's return from operations to an amount below the point of confiscation violates due process." D. C. Transit System, Inc. v. Washington Metropolitan Area Transit Comm'n., 466 F. 2d 394, 418 (D. C. Cir. 1972), cert. denied 409 U. S. 1086 (1972). That same court has also made it clear that when a public utility is required to operate at a loss, the point of confiscation has been passed:

We have been cited to no authority, and we know of none, which would justify ordering Transit to continue operations at a loss. To do so would be to deprive Transit of its property without due process of law, in direct violation of the constitutional prohibition.

Democratic Central Committee of D. C. v. Washington Metropolitan Area Transit Comm'n. 436 F.2d 233, 235 (D.C. Cir. 1970).

Atlantic Electric therefore urges that Assembly Bill 3037 be rejected as violative of the Fifth Amendment of the United States Constitution as applicable to New Jersey through the Fourteenth Amendment, the New Jersey State Constitution Art. 1, para. 20*, and the laws of the State of New Jersey, specifically N.J.S.A. 48:2-21.

*Private property shall not be taken for public use without just compensation.

In the opinion of counsel, Assembly Bill No. 3037 represents an attempt to regulate an area that has been preempted by Federal legislation, the Atomic Energy Act of 1954. The Supremacy Clause of the United States Constitution, Article 6, Clause 2, states that the Constitution and the laws of the United States "shall be the supreme law of the land." Thus, state laws, I am informed, that attempt to regulate subject matter over which Congress possesses authority cannot stand where Congress has implicitly or expressly indicated that concurrent state laws on the subject are prohibited or when such state law stands as an obstacle to the purpose and objectives of Federal law.

I am further informed by counsel that very recently, a Federal district court in Southern California reviewed a statute very similar to Bill No. 3037 in the case of Pacific Legal Foundation v. State Energy Resources, Conservation and Development Commission, decided on March 6, 1979. That case involved a challenge to the California Public Resources Code, sec. 25524.2, which provided that no nuclear power plant could be certified by the California State Energy Commission until that Commission found that the authorized United States agency had approved a technology for the disposal of high level nuclear waste. Because the California Commission had determined that the findings required by sec. 25524.2 could not be made, sec. 25524.2 in effect posed a bar by the State of further licensing of nuclear power plants in California. The judge ruled that the California statute was an attempt to exercise state regulatory authority in contravention of Federal law. In connection with this ruling, the Judge rejected the argument that

the California law did not in fact represent an attempt to regulate matters relating to radiation hazards, but was a form of economic regulation. The judge pointed out that under such a strict reading of the Atomic Energy Act any state or locality could escape preemption by fashioning a carefully tailored statement of legislative purposes. The court concluded that "the question of whether nuclear power plants may be constructed and operated in the absence of demonstrated technology of the permanent disposal of nuclear waste is exclusively reserved to the NRC by sec. 274 and that state regulation on this subject is displaced." In addition, the court also found as a separate ground that the state action was preempted as constituting an obstacle to the accomplishment and execution of the purposes and objectives of Congress with respect to the development, use and control of atomic energy. It might be noted that the conclusions reached by the court in that decision were consistent with an earlier opinion rendered by the Attorney General of California concluding that California legislation in question was unconstitutional under the Supremacy Clause.

Assembly Bill No. 3037 in prohibiting critical rate treatment with the express legislative purpose of preventing the operation of new nuclear generating stations appears to suffer from the same fatal defects as the California statute.

In summary then, not only do we question the constitutionality of Assembly Bill 3037, but we are seriously concerned with its negative impact on the ability of New Jersey's electric utilities to economically and reliably meet the future demand for energy in our State.

BRODARİ, INC.	Cat. No. 23-221

Cat. No. 23-221



